IUSS HEALTH FACILITY GUIDES

Facility Assembly Schedule Toolkit (FAST) briefing tool (v2.0)

[PROPOSAL DRAFT 1.0]

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INFORMATION	Notes
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TITLE	***Facility Assembly Schedule Toolkit (FAST) briefing tool***
Description	*FAST* is a case-based reasoning and rule-based drag-and-drop software tool that enables the briefing team to quickly assemble a schedule of accommodation by using predefined or user-defined assemblies and compare it against a norm or against other comparable precedent facilities.
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Accessing of these guides

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Development status

The specific *FAST* software development is a direct structured response of the general development process adopted by the IUSS team, and is to consolidate information from a range of sources including local and international literature, expert opinion, practice and expert group workshop/s into documents.

The facilities listed below have been analysed in detail by means of the CSIR's functional space classification and department classification to inform the types and sizes of different spaces, space assemblies, departments and the fundamental relationships between the four main space categories of workspace, workspace support, core and structure:

- Gamopedi Clinic
- Grassy Park Clinic

- Holy Cross Clinic
- Holy Cross Hospital
- Hypothetical medical ward (Brinkman)
- Johan Deo Clinic
- Khayelitsha District Hospital
- Kimberley Mental Health Facility
- Kwanokuthula CHC
- Large clinic
- Mitchells Plain District Hospital
- Mitchells Plain Ward
- Moloto Clinic
- Moses Kotane Hospital
- Natalspruit Hospital
- Hypothetical NDoH medical ward
- Hypothetical NDoH mental health ward
- Paarl Hospital
- Small clinic
- Uzimkulu Clinic
- Valkenberg Hospital
- Worcester Hospital
- Waterfall Hospital operating theatres

The abovementioned facilities provided useful insights into the current space usage patterns and provided realistic scalability and testing for the software development.

Table of contents

List of figures

List of tables

FAST User Guide software conventions

A wide range of terms are used to describe specific aspects of FAST. Many of these are used in slightly different contexts by different people. To ensure that there is no uncertainty regarding the intended meaning in FAST, lists of specific terms used in FAST are included.

Table 1: *FAST* User Guide software conventions

Convention	Use
	This is a *FAST* action. When a user drops an object on this target, then a specific action will be executed depending on the type of object. Many combinations are possible. There are currently six actions that can be combined with objects.
AAAF	All objects in *FAST* are coloured light blue (cyan). You can drag this object to another object target, or to an action, or vice versa.
Drag	Press the left mouse button and hold down until object target is reached.
	FAST drag-in-progress icon. When a user invokes a drag on a *FAST* object, this icon is displayed.
Drop	Position cursor over object target and release left button.
<Space_ASSEMBLY>	Microsoft Access database table name. You can use Microsoft Excel directly to extract data from *FAST* for external analysis purposes. <Space_ASSEMBLY> is the most important table, because the briefing space list is assembled here.
Medical Ward — BAD work space: beds — T 120 1254.96 1387.06 / A 108 1191.85	This target example indicates that the number of beds are underprovided, being an actual 108 against a target of 120. The actual m² area is also smaller than the minimum in the range that should be between 1 254.96 and 1 387.06 m² in this example.
Surgical — BAN work space: beds — T 70 886.45 979.77 / A 76 993.50	This target example indicates that the number of beds are overprovided, being an actual 76 against a target of 70. The actual m² area is also larger than the maximum in the range that should be 886.45 m², to 979.77 m² in this example.
Emergency Unit — ABA work space: consulting — T 2 22.82 25.22 / A 2 24.02	This target example indicates that the number of consulting rooms is on target, being 2 against a target of 2. The actual m² area is also within the range that should be between 22.82 m² and 25.22 m².

The following basic data entry rules should be adhered to in order to facilitate sorting and retrieval of data:

- Entries should be done in English (facility name and descriptions).
- There should be no spaces leading any entry.
- Capital letters should preferably be used for classifications and codes.

Table 2: Entering data in *FAST*

Data type	Use
(AREA)	This is an area in m² used in cases such as a space area.
(CLASS)	This is a classification code that should not exceed 24 characters for the functional space classification, and 48 characters for the department classification.
(CODE)	This is a code that should not exceed 24 characters and is for example used for the ASSEMBLY LIBRARY, Assembly Code.
(RULE NAME)	This is the rule name and could be up to 48 characters long.
(DESCRIPTION)	This is a general description and can be up to 255 characters long.
(RULE)	Is a code fragment or applet that executes interactively in the *FAST* Interactive Rule/Query Builder or fires during the allocation of derived spaces in the *FAST* DESIGN ASSEMBLY panel.
	It is a memo field type that can contain 65 535 characters when entering data through the user interface, i.e. applet development.
(TELEPHONE NUMBER)	This is a structured field that is used for telephone numbers.
(CELLULAR NUMBER)	This is a structured field that is used for cellular numbers.
(LOOKUP CODE)	This is a code that is looked up from another definition table. Normally a friendly name is displayed while the code is stored in the database. In *FAST* the code does not exceed 64 characters.
(LATITUDE DEGREE)	It is the latitude degree that is a whole number in the range 0 to 90.
(LATITUDE MINUTES)	It is the minute part of the latitude and is a whole number in the range 0 to 59.
(LATITUDE SECONDS)	It is the second part of the latitude and is a whole number in the range 0 to 59.
(LONGITUDE DEGREE)	It is the longitude degree that is a whole number in the range 0 to 180.
(LONGITUDE MINUTES)	It is the minute part of the longitude and is a whole number in the range 0 to 59.
(LONGITUDE SECONDS)	It is the second part of the longitude and is a whole number in the range 0 to 59.
(DECIMAL DEGREE)	It is a field that contains a degree such as site slope. It is a decimal with two-decimal accuracy.

OVERVIEW

This document describes the software design philosophy and operation of the Facility Assembly Schedule Toolkit (*FAST*) that is used to prepare and check the accommodation schedule of new facilities, as well as additions and alterations to existing facilities against a given set of target norms. *FAST* provides output to the Departmental Cost Calculator to estimate the construction cost. It is part of a hierarchy of strategic software tools that start with the Infrastructure Optimisation Planning Toolkit (IOPT) at the top, the Planning Unit Calculator/Translator, Order of Magnitude Cost Calculator, Facility Assembly Schedule Toolkit and Departmental Cost Calculator (Figure 1).

Figure 1: The IUSS strategic planning tools
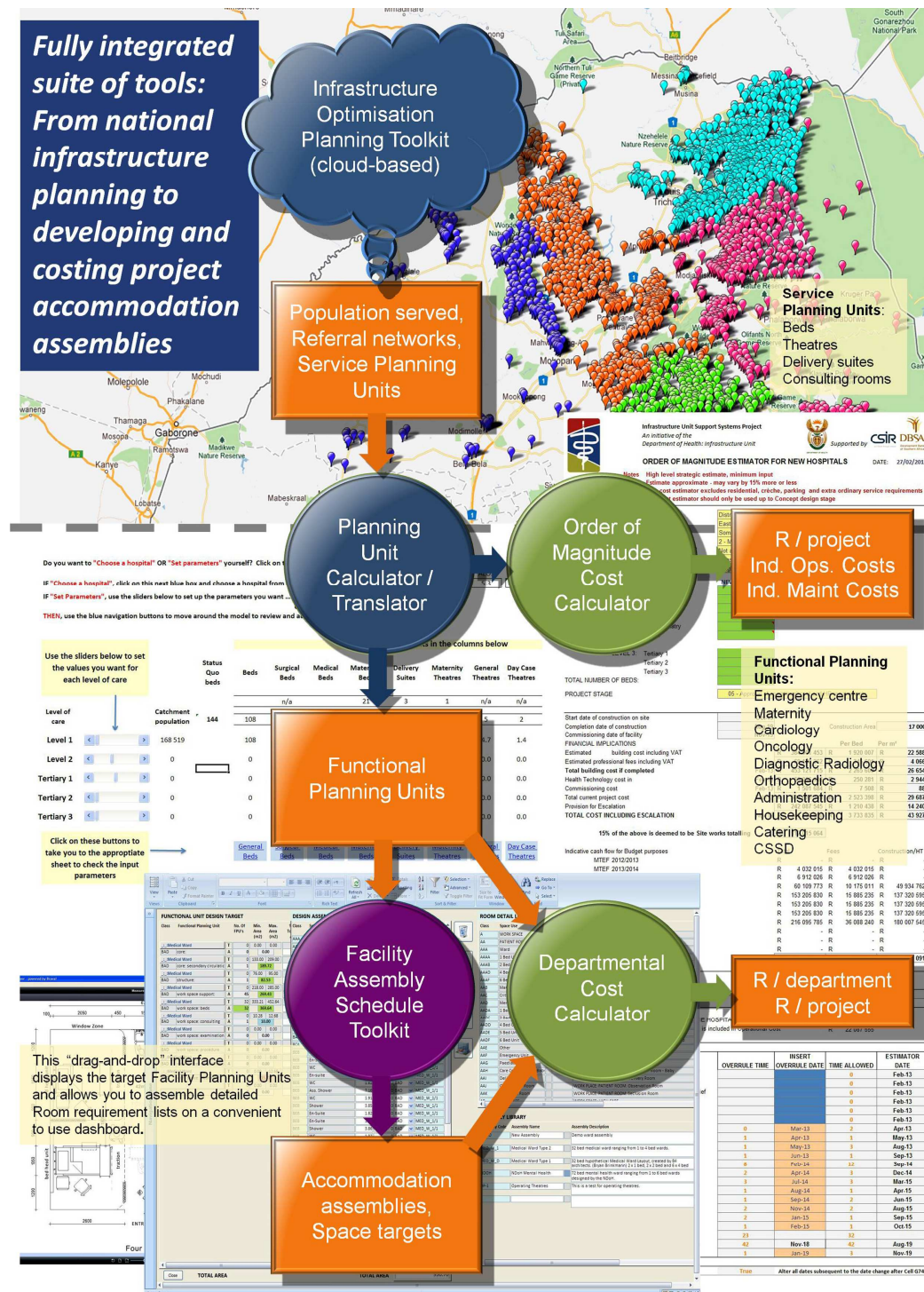
The main input into *FAST* originates from the Planning Unit Calculator in the form of functional planning units. Once a facility has been defined, FAST is able to provide output to the Departmental Cost Calculator where the construction cost can be estimated (Figure 1).

Users of *FAST* should refer to all other IUSS documents in order to understand the design philosophy for the Clinical Services, Support Services, Healthcare Environment/Cross-cutting Issues and Procurement and Operation. You will notice in Table 3 that all aspects are important, placing a significant burden on the design team and the *FAST* user. However, the case-based reasoning (CBR) and rule-based design of *FAST* are intended to make it as easy as possible for the user by reminding him/her of the requirements by inter alia providing contextual spatial assemblies.

IUSS: General hospital support (GNS) reference documents

CLINICAL SERVICES	Essential	Recommended	SUPPORT SERVICES	Essential	Recommended	HEALTHCARE ENVIRONMENT/CROSS-CUTTING ISSUES	Essential	Recommended	PROCUREMENT AND OPERATION	Essential	Recommended
Adult inpatient services	x		Administration and related services	x		Generic room requirements	x		Integrated infrastructure planning	x	
Clinical and specialised diagnostic laboratory guidelines	x		General hospital support services	x		Hospital design principles	x		Briefing manual	x	x
Mental health	x		Catering services for hospitals	x		Building engineering services	x		Space guidelines	x	
Adult critical care	x		Laundry and linen department	x		Environment and sustainability	x		Cost guidelines	x	
Emergency centres	x		Hospital mortuary services	x		Materials and finishes		x	Procurement		x
Maternity care facilities	x		Nursing education institutions	x		Future healthcare environments		x	Commissioning health facilities		x
Adult oncology facilities	x		Health facility residential	x		Healthcare technology		x	Maintenance		x
Outpatient facilities	x		Central sterile service department	x		Inclusive environments		x	Decommissioning		x
Paediatrics and neonatal facilities	x		Training and resource centre		x	Infection prevention and control		x	Capacity development		x
Pharmacy	x		Waste disposal	x		Information technology and infrastructure	x				
Primary healthcare facilities						Regulations	x				
Diagnostic radiology	x										
Adult physical rehabilitation	x										
Adult post-acute services	x										
Facilities for surgical procedures	x										
TB services	x										

Colours legend

Consultants	(green)
Administrators	(yellow)
Related documents	(blue)

PART A – SOFTWARE DESIGN PHILOSOPHY

Introduction

FAST is a case- and rule-based drag-and-drop software tool that enables the professional health facility design team to quickly assemble a list of accommodation by using predefined assemblies and compare it against a norm or against other comparable precedent facilities.

FAST is a novel briefing tool to facilitate the creation of health building briefs. The prototype was demonstrated to various groups, such as the IUSS Cost Norms Working Group and at the 2013 SAFHE Conference in Cape Town. On the basis of subsequent comments and discussions, the fundamental software capabilities were determined and are incorporated in *FAST* v2.0. The essential purpose of this software tool is to effectively and efficiently assist in the translation of the strategic requirements for a particular new health facility into a detailed spatial design brief.

The software application is relational database-based and uses a convenient and efficient 'drag-and-drop' interface illustrated in Figure 2. The system uses a novel concept of *design objects* (light blue coloured blocks) and *actions* (square blocks with icons) implemented by means of a drag-and-drop interface. At the moment, six types of *actions* are supported and when combined with the various *objects,* more than 25 tasks can be achieved. When an *object* (indicated by light blue on the interface) is dragged and dropped on top of another *object* or alternatively on top of an *action* button, the system automatically knows what the user is trying to achieve from the context and order of the action.

This software architecture significantly reduces the number of command buttons required on the screen and also simplifies the complexity of the briefing process that requires the user to consider many different design options.


Figure 2: A typical example of the FAST drag-and-drop interface

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

1

The case-based reasoning (CBR) aspect of *FAST*

CBR is one of the two fundamental approaches that have been used in the design of *FAST*. CBR has several advantages that make it an appropriate method to use in *FAST*. The list below has been collated and adapted from Kolodner (1993). In terms of an IUSS project, a case could range from a single room such as a bed unit, an assembly of rooms such as a medical ward, or it could be an entire health facility. The following advantages specifically related to the architectural briefing and design process as implemented in *FAST* can be identified:

1. CBR allows the designer to propose solutions to design problems quickly, because it avoids the time necessary to derive those answers from scratch.
2. CBR allows a designer to propose solutions in domains that are not completely understood. This is of particular importance to the advanced planning that is necessary to design and build complex facilities such as hospitals. Although extensive IUSS Health Facility guides have been developed, not everything in the design of a complex health facility can be expressed in terms of mathematical rules.
3. Remembering previous designs is particularly useful in warning of the potential for problems that have occurred in the past, alerting a designer to take action to avoid previous mistakes.
4. CBR can be used as a communication tool between designers and other less design-literate participants to clearly communicate the design intentions.
5. Cases help a designer to focus his design activity on important parts of a problem by pointing out what features of a problem are the important ones.
6. When CBR is used to solve problems, solutions can be justified by the cases they are derived from. In a domain where it is difficult to evaluate solutions objectively, such as architectural design, CBR has the advantage of providing illustrations of the effects of particular solutions.
7. CBR can be designed to anticipate potential problems as natural part of the reasoning process. Unsuccessful experiences with past solutions can be used in case-based systems to anticipate possible problems that might result from solving a design problem a certain way. In general, this capability adds efficiency. In architectural design anticipation of problems is critical.
8. CBR provides a way for designers and computers to interact in a realistic way. CBR is fundamentally inspired by human behaviour. Certain tasks in design, such as the calculation of energy consumption or acoustic performance, are easier for a computer to achieve, whereas aesthetic design decisions are best decided by the designer. Designers are good with creative reasoning, but poor at remembering the full range of applicable cases. Humans tend to be biased in their memory or as novices they have not yet had the experiences they need to solve the problem. During an interview of the professional team involved in a large and complex construction project, this fact was emphasised.
9. The knowledge acquisition for a CBR system is natural. Concrete examples rather than piecemeal rules can be used. Experts, such as experienced health practitioners, find it difficult to report the knowledge they use to solve problems. They are quite at home reporting their experiences and discussing the ways in which cases are different from one another.
10. CBR should be considered when it is difficult to formulate domain rules, but where cases are available. Formulating specific rules is difficult in weak theory domains such as architectural briefing and design. In this domain knowledge is very difficult to obtain, incomplete, uncertain or sometimes inconsistent. It is impossible to formulate rules when there is a great amount of variability in design situations that should have the same outcome.
11. CBR can be considered when rules that can be formulated require more input information than what is normally available. This may be due to incomplete specified problems, or the fact that the knowledge required is not available at design (problem-solving) time. This is often the case in the construction industry and fast-track projects where all project information is not available upfront.
12. CBR should be considered when it is too complex (expensive in computational terms) to use rules because the average rule chain is too long.
13. CBR should be used when generally applicable knowledge is not sufficient to solve a problem. This could be due to the fact that knowledge changes with context, or because some of the knowledge required to solve the problem is used only under special circumstances.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

2

14. CBR should be considered when a case library already exists. In the IUSS project a number of health facilities have already been analysed and is available in structured format.
15. When no fast computation method exists for deriving a solution from scratch, CBR allows new solutions to be derived from precedent ones. Health facilities can be quickly configured by using different exemplar department and architectural assemblies.
16. When there is no fast computational method for evaluating a solution, or when there are so many unknowns that evaluation methods are unusable or difficult to use, CBR provides an alternative.
17. CBR allows evaluation of solutions when no direct algorithmic method is available for evaluation.
18. Cases are useful in interpreting open-ended and ill-defined concepts.

The disadvantages and caveats of case-based reasoning

CBR has several disadvantages and caveats in architectural design that should also be considered. The list below has been collated and adapted from Kolodner (1993):

1. CBR requires cases or spatial assemblies in the context of this document. Traditionally the effort in building a CBR system went into case collection. It is apparent from a study and interviews[1] with the designers of other CBR systems that it can be an enormous effort. To be successful in the architectural profession and the construction industry it should not require such extraordinary efforts. The case library should be automatically assembled during the normal professional design activities.
2. For CBR to be useful and reliable, cases with similar problem statements should have similar solutions. CBR is based on the premise that situations recur in a predictable way. Adaptation modifies old solutions to fit new requirements. If a domain is discontinuous where similar situations require wildly different kinds of solutions, then CBR cannot be used and would be misleading. This is unfortunately only partially true in architecture, because creative designers do not always solve related design problems in a similar way.
3. CBR solutions are not guaranteed to be optimal and in health briefing and design it unlikely that this ambitious goal would ever be achieved. The full range of possible design solutions is usually not explored in a CBR-system intended for design support. Optimal or more creative solutions may be missed due to time constraints or incomplete knowledge of the design team. This is generally a problem in any heuristic system. The designer cannot escape his responsibilities; however, the CBR system will remind him of design aspects he might have forgotten and make sure that essential spaces are not forgotten.
4. An inexperienced case-based user might be tempted to use old cases blindly, relying on previous experience without validating it properly in the new situation.
5. A case-based user might allow cases to bias him or her too much in solving a new problem.
6. Case libraries require considerable storage space. In the design of CBR-systems, special consideration must be given to ensure a long life of the case with changing technology. A large sum of money in terms of intellectual capital, time and effort is encapsulated in the case library. Persistence of data is therefore of paramount importance.
7. Inexperienced people are often not reminded of the most appropriate sets of cases when they are reasoning.

The rule-based reasoning (RBR) aspect of *FAST*

A RBR system has also been implemented in FAST alongside the CBR system to calculate derived spatial sizes, where the actual size of the space can only be known in the context of the final design. The RBR-system has been implemented by means of an interpretive spatial programming language called ESPACE. A simple example of a rule is the contextual calculation of the amount of secondary circulation space in a ward when a *FAST* user is creating a new design. By means of the introduction of ESPACE into *FAST,* the

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[1] Janet Kolodner and Craig Zimring personal communication during April 2000 at the Georgia Institute of Technology, Atlanta, Georgia, USA.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

3

software developers created special event-driven formulas that automatically execute (trigger) when a *FAST* user drags-and-drops derived space types into the DESIGN ASSEMBLY area.

Spaces listed in the ROOM DETAIL LIBRARY can be only one of two types. It must either have a fixed pre-allocated size in m², or it must have an ESPACE rule attached to it. If neither of the two applies, it means it will be entirely the user's responsibility to determine an acceptable m² size within the specific context.

Detailed documentation of how this all works is included below.

CBR compared to other methods

The CBR/CBD cycle (Kolodner 1993:18) has striking similarities with the product development method of concept selection proposed by (Pugh, 1996; Ulrich et al., 1995) (**Error! Reference source not found.**3). In generalised terms, the CBD-cycle is the case equivalent of concept selection.

The typical stages of the CBD-cycle are (Kolodner et al*. 1996:35):

1. *Case retrieval (assembly)*. Partially matching cases must be retrieved to facilitate reasoning. This is called *case retrieval.* The case was created in the first instance by a *case storage* process also called *memory update*.
2. *Solution proposal*. In problem-solving CBR, an approximate solution to the new problem is proposed by extracting the solution from the retrieved case.
3. *Adaptation*. This is the process of altering an old solution to fit it to the context of the new situation.
4. *Criticism*. This is a critical analysis of the new solution before applying it.
5. *Justification*. This is the process of creating an argument for the proposed solution, done by a process of comparing and contrasting the new situation with prior cases. Sometimes justification might be followed by a criticism step in which hypothetical situations are generated and the proposed solution applied to them in order to test the solution.
6. *Store assembly (memory update)*. The new case is permanently saved for future use.

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INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

4
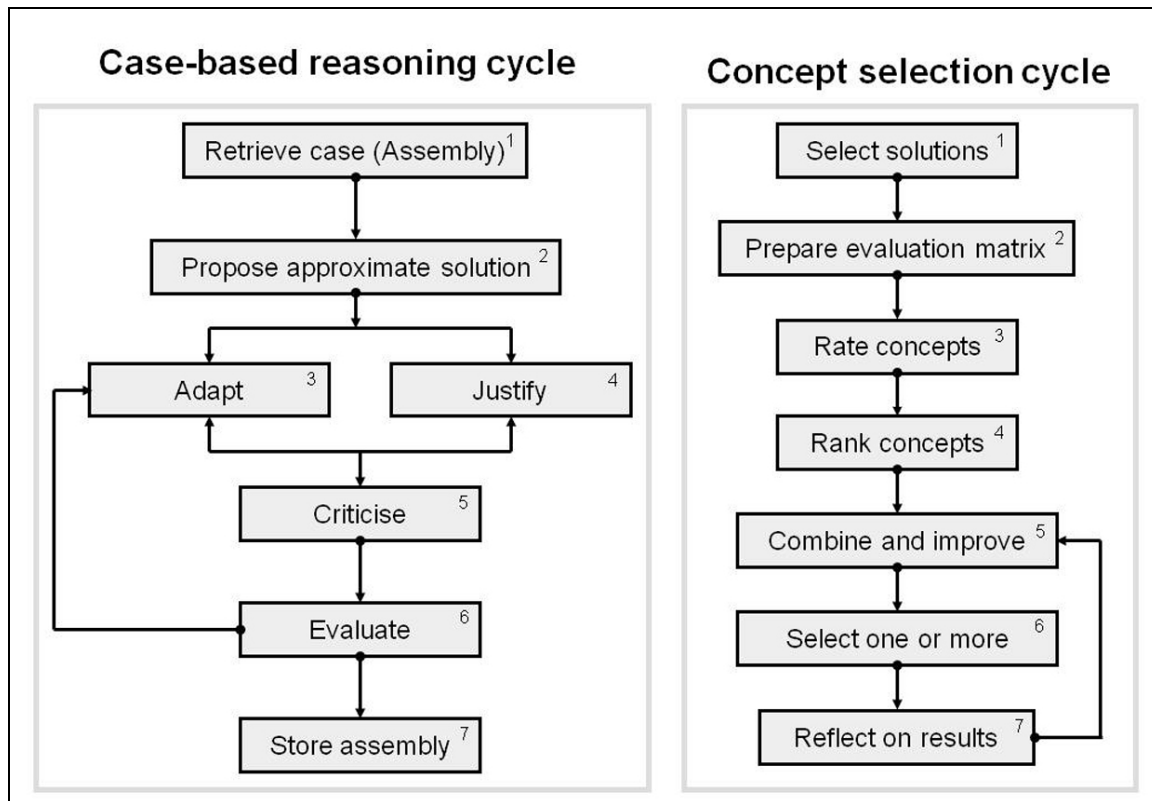
Figure 3: Case-based reasoning compared to concept selection (collated by author from Kolodner (1993:18), Ulrich et al. (1995) and Pugh (1996))

The process as illustrated in Figure 3 is conceptually typical of how a *FAST* user would use the system.

Table 3 compares the characteristics of *case-based reasoning*, (CBR), *rule-based reasoning* (RBR) and *model-based reasoning* (MBR)[1].

These differences lead to differences in knowledge acquisition. In RBR, knowledge is extracted from expert opinion and encoded in rules. This is often difficult to achieve. In CBR most (but not all) knowledge is in the form of cases. CBR needs adaptation rules and similarity metrics and more types of knowledge, but knowledge is easier to acquire.

In the past both MBR and CBR were developed as methods for avoiding reasoning from scratch. Both compose knowledge into large chunks and reason using large chunks. The differences mostly have to do with the content of the knowledge used and the conditions of applicability for each.

Table 3: A comparison between case-based, rule-based and model-based reasoning (collated by author)

Case-based reasoning	Rule-based reasoning	Model-based reasoning
Cases in case libraries are constants that describe the way things work.	Rules in rule bases are patterns.	Store causal models of devices or domains.
Cases are retrieved that match the input partially.	Rules are retrieved that match the input exactly.	
Cases are retrieved first, approximating the entire solution at once, then adapted and refined to a final answer.	Rules are applied in an iterative cycle of micro events.	

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[1] Janet Kolodner is of the opinion that CBR, MBR and RBR form a continuum. Personal communication 14 April 2000.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

5

IUSS

Case-based reasoning	Rule-based reasoning	Model-based reasoning
Cases are large chunks of domain knowledge, quite likely redundant, in part, with other cases. Based on idiosyncratic knowledge, specific to episodes but mostly not normative. Provides methods for constructing solutions.	Rules are small, ideally independent but consistent pieces of domain knowledge.	Emphasise general knowledge that covers a domain. Models hold knowledge needed for validation or evaluation of solutions but do not provide methods for constructing solutions.
CBR can be used both when a domain is well and not so well understood. In the latter case it assumes the role of a generalised model.	Not applicable	Is used when a domain is well enough understood to enumerate a causal model.
Provides for efficient solution generation and evaluation is based on the best cases available.	Not applicable	Provides a means of verifying solutions, but solution generation is unguided.
Needs a means of evaluating its solutions, guiding its adaptation and knowing when two cases are similar.	Not applicable	Models provide a means of evaluating its solutions.

Design and planning principles

Specific hospital design principles are dealt with extensively in a separate IUSS document and must be read in conjunction with this document when creating a new design brief with *FAST*.

General design and planning principles

There are a number of planning principals that need to be emphasised and some of them need to be directly considered when creating a brief.

- Inpatient accommodation forms the core of a hospital and has functional relationships with most departments.
- Patients enter the facility either as *inpatients*, day patients or outpatients.
- The planning of the inpatient units should support planning principles that promote a holistic healing environment with, where possible, clear external views, consideration of noise levels, natural ventilation, as much morning sun or light as possible and spaces that would create a pleasant healing environment.
- Design that reduces noise in the facility.
- Maximum use of natural light and views for patients and staff.
- A clinically safe and effective healthcare patient environment.
- Design that maximises patient safety and reduce the risk of errors and accident.
- Ergonomically safe and risk-free work environment.
- Design that avoids large sprawling layouts that are both resource- and cost-intensive.
- Efficient workflow that will support effective resource utilisation.
- Appropriate space norms and room design.
- Compliance with quality assurance principles.
- Communication and information systems that will support patient management and administration.
- Layouts that reflect the service needs of the patients to be accommodated in the inpatient unit.
- Design that clusters beds to facilitate staff efficiency, meal relief and optimises patient supervision particularly at night when staffing levels are lower.
- Design that facilitates the delivery of care at the patient's bedside or proximal to the bedside whenever possible. This includes suitable services and supplies at the bedside.
- An aesthetically pleasing environment for patients and that assist staff to perform the required activities in the most efficient and supportive environment.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

6

IUSS

- Minimise staff travel distances to obtain supplies and equipment.
- Design that balances requirements for clinical need and capital and recurrent budget considerations.
- The orientation of the inpatient units and aspect of inpatient accommodation should be prioritised in the development of the master plan. The orientation of the inpatient units should preferably be north facing or north east, south orientation is acceptable.
- If the prevailing wind direction is south, east and west, orientations of inpatient units are discouraged.
- The placement of inpatient units must ensure patient privacy. Visitors, staff and service traffic through the inpatient units should be avoided.
- Inpatient units can be organised on the same level over a large floor area or they may be stacked into a multi-storey block separate from diagnostic and treatment facilities, but closely linked. This allows more consistent planning of inpatient accommodation, increases flexibility in the way that beds can be organised, and enables maintenance and refurbishment to be carried out more easily.
- All sanitary requirements should be on external walls.
- Service support facilities and top-up of stores or pharmaceuticals and food delivery should be accessible to the inpatient units without compromising privacy or noise levels.
- Design that enables greater levels of observation in response to increased patient acuity.
- Adequate provision of space to allow for activity at the bedside and for other activities within the inpatient unit.
- Adequate storage space for bulky equipment.
- Access to and within the area for physically and sensory impaired people.
- Services to enable personal communication by patient services to enable direct admin/clinical communication from the bedside.
- Design for privacy for staff and patients especially during clinical treatment for bodily functions and personal care, for personal discussions and telephone calls.

The planning of the required space includes the following requirements:

1) *Personnel* – How many people are there at any given time in a specific place to perform a specific task or procedure?

2) *Activities*– What procedures are to be performed?

3) *Equipment* – What equipment is required that will occupy the space?

4) *Security* – Access control to be determined by the hospital management

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

7

IUSS

PART B – USE OF THE *FAST* SOFTWARE

When the word 'design' is used in the context of this document it refers to the selection of spaces with the purpose of creating a schedule of spaces to support the briefing process and not design in the traditional holistic sense of architecture. The output from *FAST* is in the form of reports and spreadsheets that provide input into other software and processes for analysis purposes and are used to essentially determine if the design is within spatial, functional and cost norms.

Login

The main *FAST* screen is shown below (Figure 4). It provides access to all other features of the program, such as the definition of the briefing project, the creation of design targets and the creation of the design.
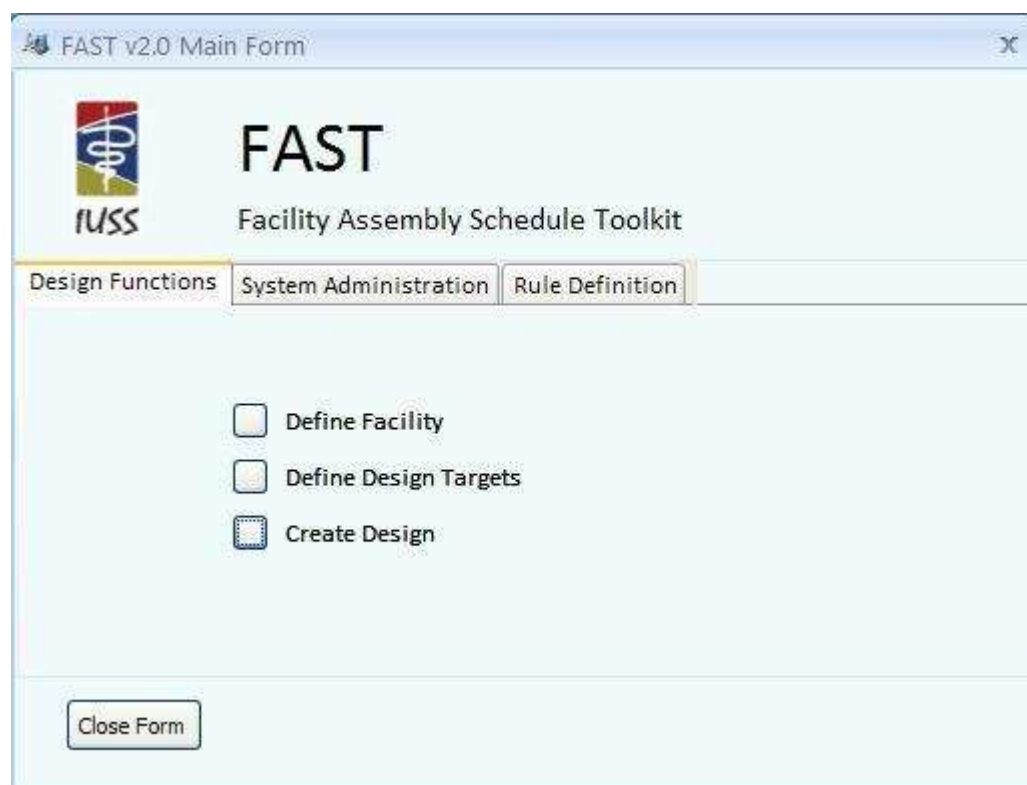
Figure 4: *FAST* main form. Provides access to all other features

Define facility

This form is used to enter and edit the main characteristics of the design and can be described as the birth certificate of the design. Most of the fields are self-explanatory; however, the 'Designated Level of Facility' field needs special mention.

This field is accessible through the 'FACILITY_LEVEL' system variable in the ESPACE rule programming language. It is especially useful to distinguish or have different rules for different types of hospital. The 'FACILITY_LEVEL' system variable returns the following values (Table 4):

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

8

Table 4: Implementation of Facility Level in *FAST*

Implementation of Health Facility Level in *FAST*	
Type of health facility	Level number accessible through 'FACILITY_LEVEL' system variable
Clinic	1
Community Health Centre	2
District Hospital (Level 1)	3
Outreach Mobile	4
Regional Hospital (Level 2)	5
Special Maternity	6
Special Psychiatric	7
Special Tropical	8
Tertiary Hospital (T1) Developing	9
Tertiary Hospital (T2) Fully Developed	10
Tertiary Hospital (T3) National Referral Hospital	11
Tertiary Hospital (T4) Central Referral Hospital	12

Figure 5: Current Health Facility form that is used to define the main characteristics of the design

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

9

Space assembly dashboard (create design menu item)

This is the main form where designs are created. The following methods can be used to create a design:

- It can be created room by room from the ROOM DETAIL LIBRARY. (Least efficient)

- A design can be imported from an external source such as a CAD system through the *FAST* comma delimited exchange format documented elsewhere in this document in Appendix B. (Very efficient)

- It can be assembled from predefined assemblies from the ASSEMBLY LIBRARY. (Very efficient)

Assembly design from ROOM DETAIL LIBRARY

This is the most fundamental and slowest (from a productivity point of view) design action that *FAST* supports. This can be used to achieve the following tasks:

- A new design assembly can be created from a set of rooms.

- An existing design can be modified by adding or deleting rooms.
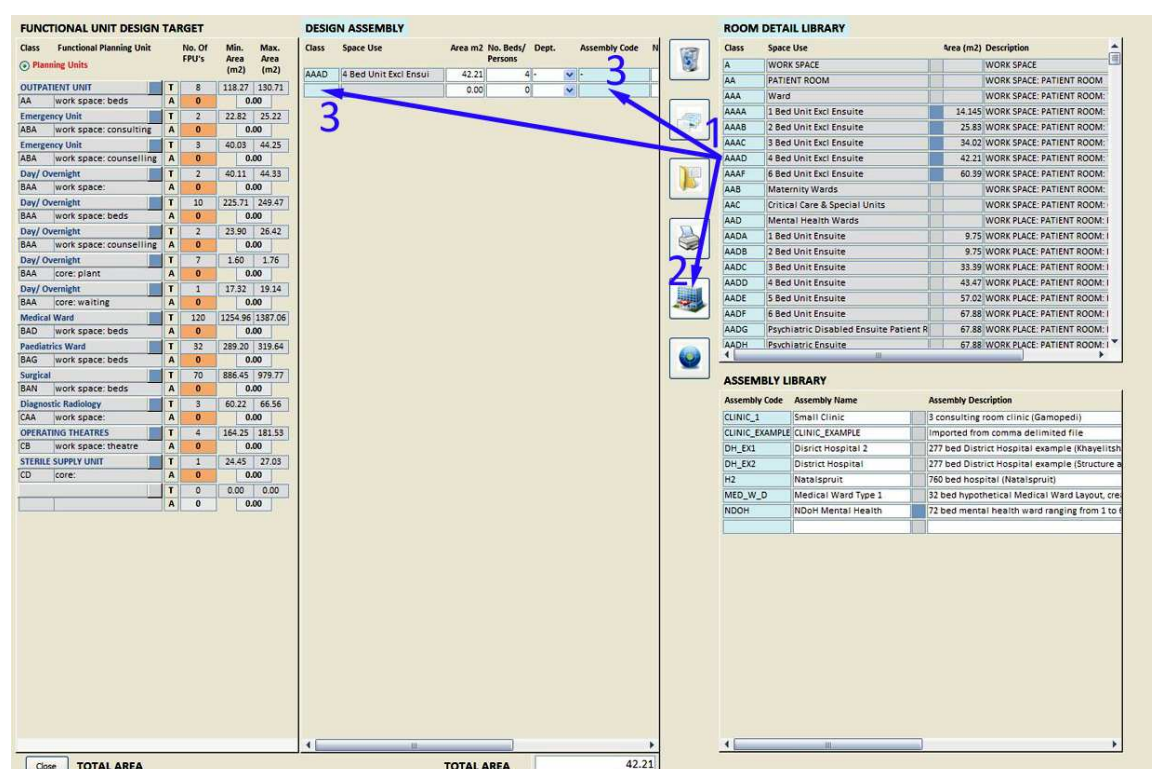
Figure 6: Create a design from ROOM DETAIL LIBRARY (Drag from 1 and Drop at 2 or 3)

Figure 6 illustrates the various possible actions. If a space has a light blue square block indicator in the **ROOM DETAIL LIBRARY** between the Space Use and Area (m²) fields, then it means that there is an illustrative layout drawing attached to the item. You can view this drawing by dragging the **Code** field indicated with a 1 (in this case Code AAAD) from the **ROOM DETAIL LIBRARY** and drop it on the display drawing action indicated with a 2. This will launch the *FAST* viewer that will give you an indication of the design of a particular layout such as the m² area, dimensions and internal layout. (Figure 7)

Once the designer is satisfied with the selection of a particular room type, it can be dragged and dropped into the **DESIGN ASSEMBLY** area by dropping the room either on the **Class** field or the **Assembly Code** field.

You will notice that the **Dept.** and **Assembly Code** fields contain a '-' at this stage. This indicates that the particular space has not yet been allocated to a health facility department, i.e. it is effectively 'homeless'.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

10

You can now allocate a department or wait until you have all the rooms for a particular department and then allocate them. The **Assembly Code** is at this stage unallocated. A code will be allocated when you save a particular set of rooms to define a named assembly in the **ASSEMBLY LIBRARY**. If a named assembly is brought into the **DESIGN ASSEMBLY AREA,** then the **Assembly Code** and version number are displayed in this field.

If you dragged-and-dropped the wrong space type into the **DESIGN ASSEMBLY,** you can easily delete it by executing the action illustrated in Figure 12. Be sure to drag-and-drop from the **Class** field and not the **Assembly Code** field, unless you want to delete an entire assembly.
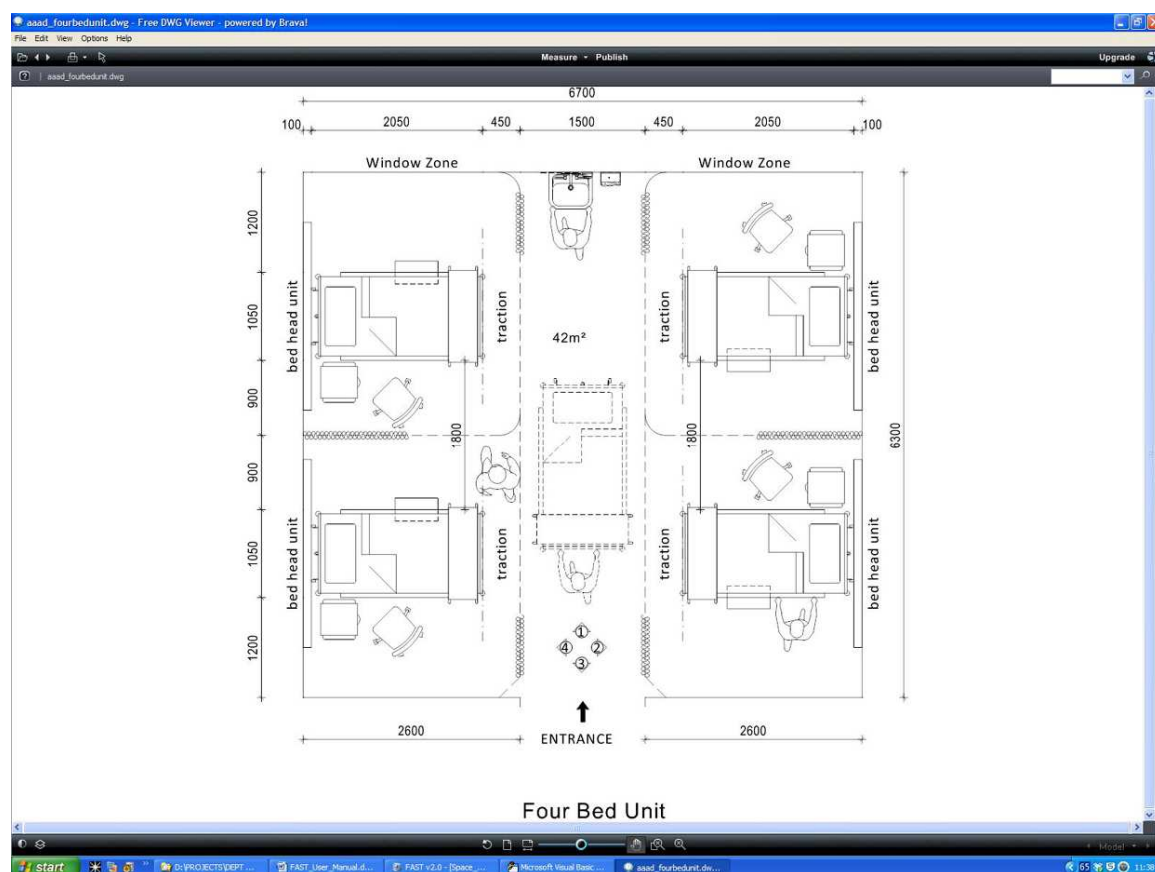
Figure 7: FAST drawing display of room AAAD, a four-bed unit, excluding en suite that is 42.21 m²

Assemble design from ASSEMBLY LIBRARY

This is the most efficient (from a productivity point of view) design action that *FAST* supports. This can be used to achieve the following tasks:

- Large and complex design assemblies can be quickly created from assemblies that, for example, contain an entire ward.

- An existing design can be modified by adding or deleting single rooms or entire assemblies due to the introduction of version numbers in the Assembly Code field.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

11
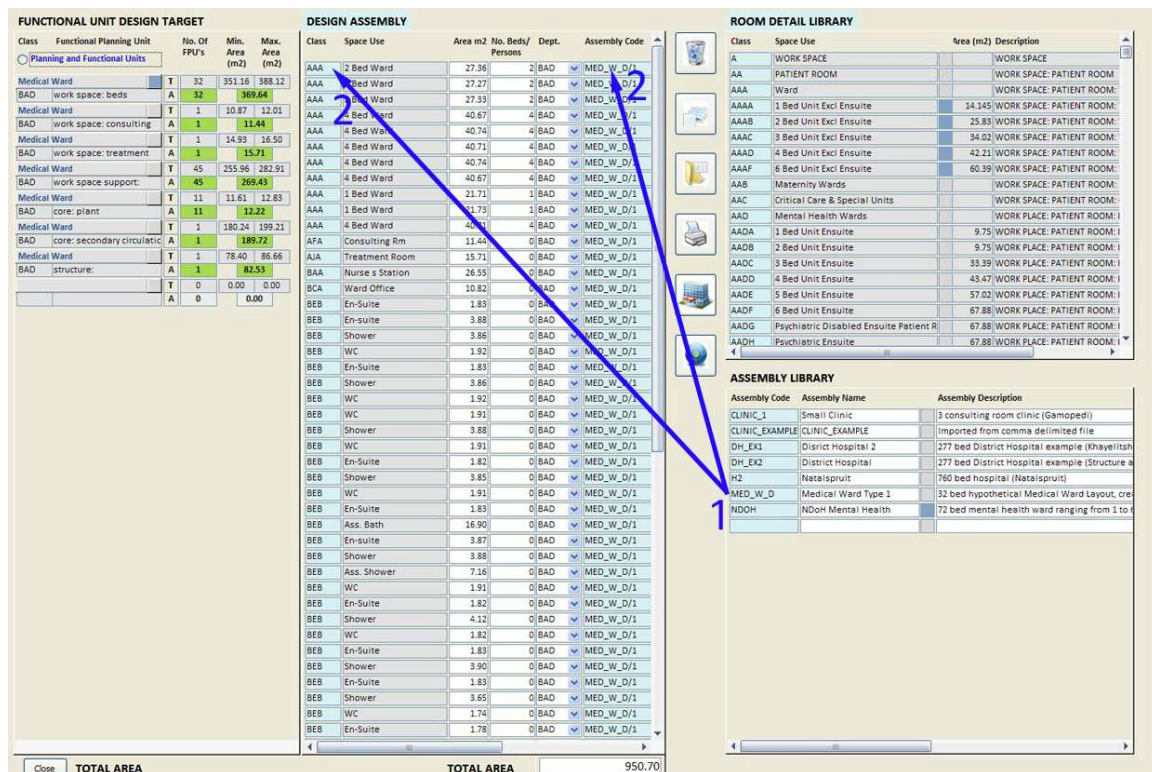
Figure 8: Create a design from the ASSEMBLY LIBRARY (Drag from 1 and Drop at any position 2)

Figure 8 illustrates the various possible actions. Select an existing design assembly from the **ASSEMBLY LIBRARY** if there is a suitable one. If an assembly has a light blue square block indicator in the **ASSEMBLY LIBRARY** between the Assembly Name and Assembly Description, then it means that there is an illustrative layout drawing attached to the item. You can view this drawing by dragging the **Assembly Code** field indicated with a 1 (in this case Code MED_W_D) from the **ASSEMBLY LIBRARY** and drop it on the display drawing action illustrated above in Figure 8. This will launch the *FAST* viewer that will give you an indication of the design of a particular layout.

Once the designer is satisfied with the characteristics of a particular assembly type, it can be dragged and dropped into the **DESIGN ASSEMBLY** area by dropping the assembly room either on the **Class** field, or the **Assembly Code** field.

You will notice that the **Dept.** field will contain the department that was originally allocated when the assembly was built. The **Assembly Code** fields will contain a 'MED_W_D/1'at this stage. This indicates that after insertion of assembly code 'MED_W_D', version number '1' was allocated to it. This is a particularly useful feature. If you insert another instance of the same assembly version, number '2' will be allocated to all the spaces that belong to that instance. The fact that new version numbers are allocated makes it very easy to delete an entire assembly from the **DESIGN ASSEMBLY** avoiding the tedium of deleting each room separately.

If you dragged-and-dropped the wrong assembly into the **DESIGN ASSEMBLY** you can easily delete it by executing the action illustrated in Figure 9. Be sure to drag-and-drop from the **Assembly Code** field if you want to delete an entire instance of an assembly. As before, if you want to delete or add individual spaces to the assemblies contained in the **DESIGN ASSEMBLY,** you can easily delete it by executing the action illustrated in Figure 9. Be sure to drag and drop from the **Class** field to remove single spaces.

Use of DESIGN COMPARATOR

The *FAST* DESIGN COMPARATOR is used to compare different designs with regard to sizes, types and number of spaces. This is useful to compare precedent designs against a new DESIGN ASSEMBLY.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

12

Figure 9: The *FAST* DESIGN COMPARATOR allows convenient comparison between two designs

To open the DESIGN COMPARATOR Drag from object at 1 and Drop on action at position 2. If there was already a design in the comparator it will open the DESIGN COMPARATOR panel and display the data. If you want to display a different design, Drag from action at 3 and Drop on object at position 4. To retrieve any design from the design repository follow the method illustrated in Figure 9. A list of designs that is currently available in the design repository will appear in a block with a red border. Drag from object at 5 and Drop on object at position 6. The design selected will now appear in the DESIGN COMPARATOR.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

13

Figure 10: Select a design from the design repository for insertion into the DESIGN COMPARATOR

Create template design target

It is a rather difficult and tedious process to create design targets for health facilities, because a designer cannot simultaneously think of all aspects that need to be considered in this complex environment. In recognition of this a special action has been introduced to quickly and accurately build a template target. Once this has been done the user can modify it to suit the specific requirements of a design.

The first step is to create a design assembly that most closely matches what the design team thinks is the best solution for a particular size health facility. It could be based on a known existing hospital, if you have the detail available, or you can build it from assemblies in the ASSEMBLY LIBRARY, or you could even go to the effort of starting completely from scratch.

Once you are satisfied with the design in the DESIGN ASSEMBLY you can Drag from position 1 and Drop at position 2. Behind the scenes a rather complex series of calculations takes place to create a template target. The number of functional planning units per department, as well as an area range is calculated. *FAST* calculates the actual m² per planning unit, per department and then adds 5% above and below this figure to create a 10% target range. Once this has been done the user can inspect the results and make finer adjustments where necessary to complete the target.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

14

Figure 11: Create a new functional unit design target from a design assembly. (Drag from 1 and Drop at position 2)

Delete actions

Due to the large number of rooms that define a large health facility a hierarchy of delete actions has been introduced in *FAST*. On the space assembly dashboard, six possible delete actions exist, i.e. delete a specific room (Figure 12), delete specific design assembly (Figure 13), delete entire design assembly (Figure 14), delete (hide) design comparator (Figure 15), delete assembly library item (Figure 16) and delete the entire project from the design repository (Figure 17 and 18).

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

15
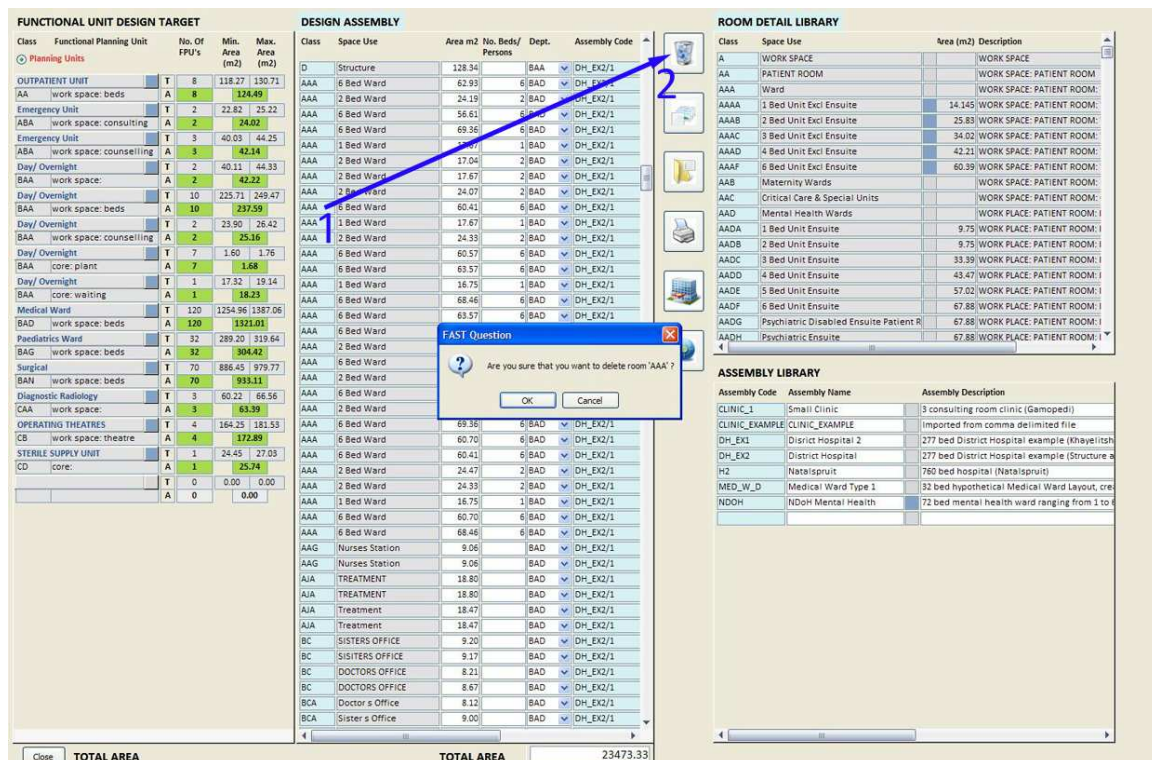
Figure 12: Delete a specific room from the DESIGN ASSEMBLY (Step 1 and 2) (Drag from 1 and Drop at 2)
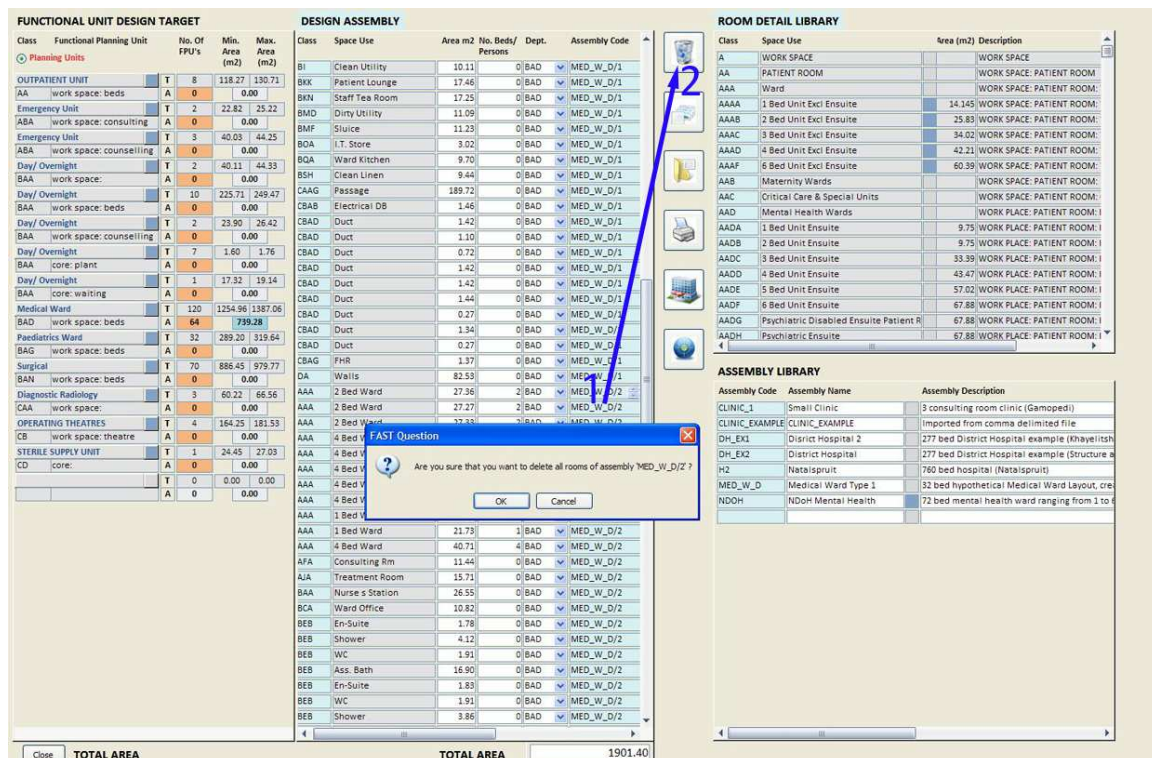
Figure 13: Delete specific design assembly (Step 1 and 2) (Drag from 1 and Drop at 2)

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

16

IUSS

Figure 14: Delete entire design assembly (Step 1 and 2) (Drag from 1 and Drop at 2)

Figure 15: Delete design comparator (Step 1 and 2) (Drag from 1 and Drop at 2)

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

17
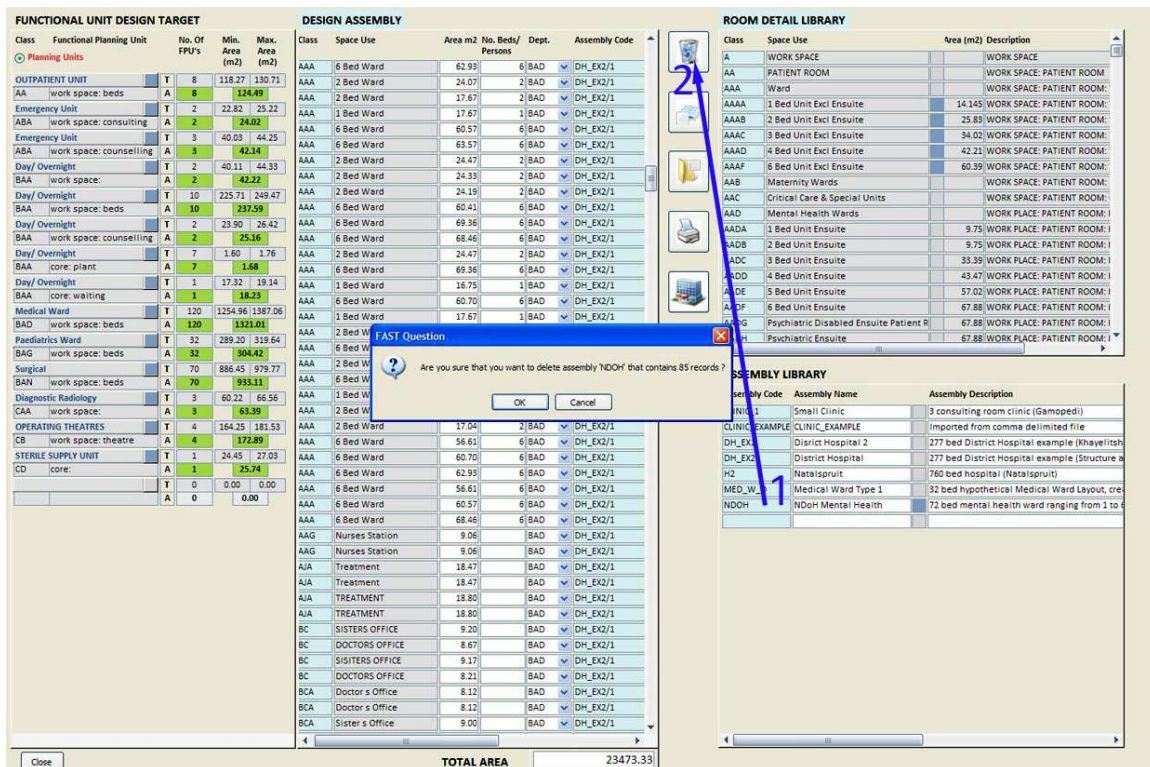
Figure 16: Delete assembly library item (Step 1 and 2) (Drag from 1 and Drop at 2)
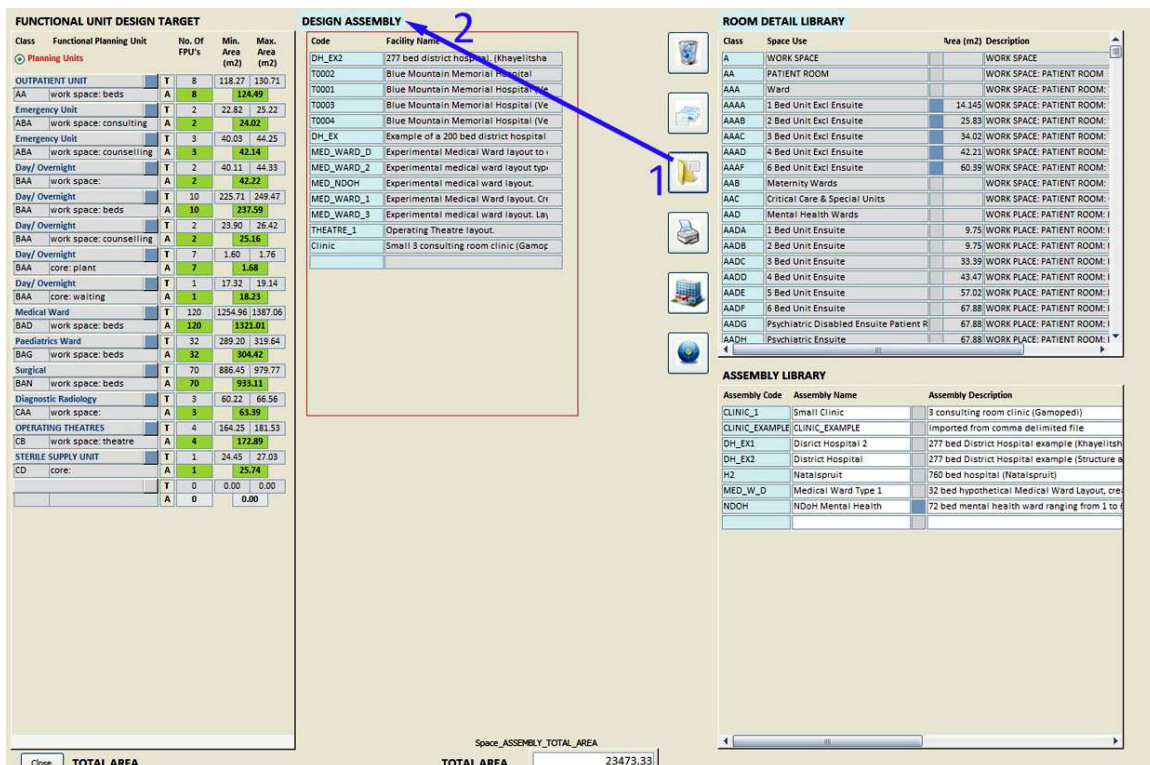
Figure 17: Delete entire project permanently from the design repository (Step 1 and 2) (Drag from 1 and Drop at 2)

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

18

IUSS
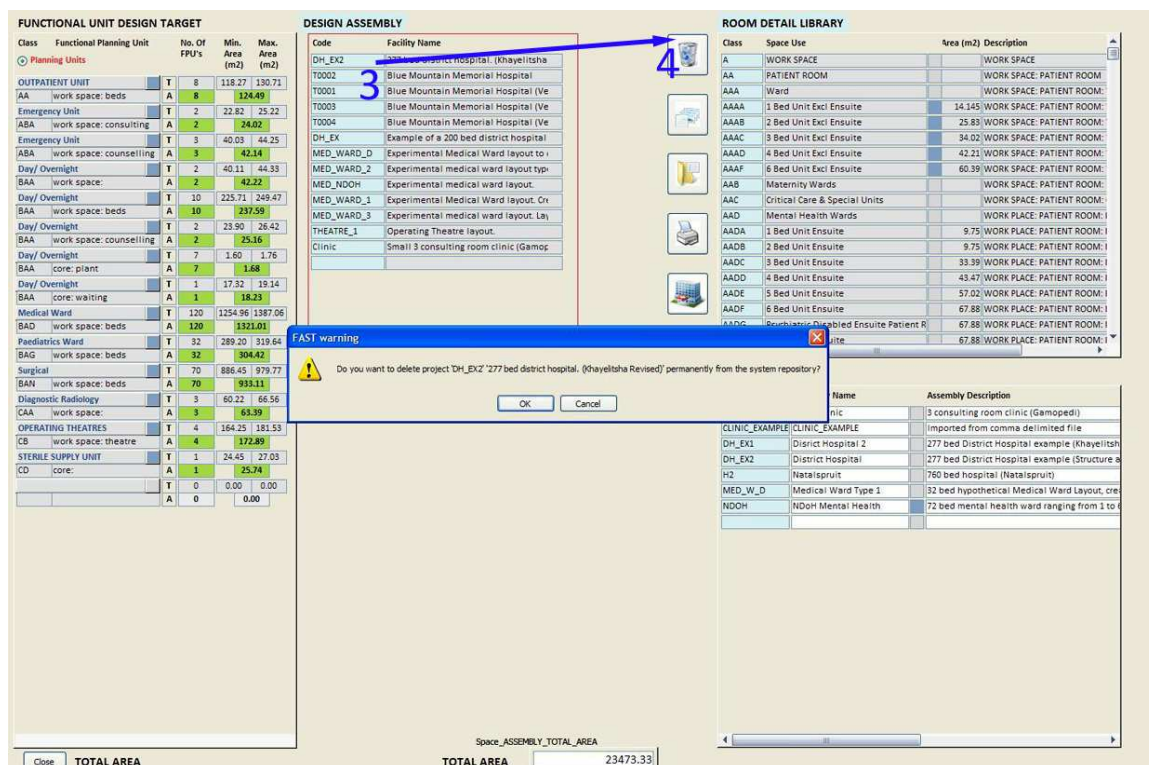
Figure 18: Delete entire project from design repository (Step 3 and 4) (Drag from 3 and Drop at 4)

Space target dashboard (define design targets menu item)

This is the main form where design targets are created. The following methods can be used to create a target:

- It can be created department by department from the FUNCTIONAL UNIT LIST. (Least efficient)

- A predefined target can be selected from the FUNCTIONAL UNIT DESIGN TARGET LIBRARY, if a suitable target already exists. (Very efficient)

- A target template can be created from a good precedent design that is currently loaded in the DESIGN ASSEMBLY. This was illustrated in Figure 11 above. (Very efficient)

The latter method discussed above is a good example of a case-based reasoning approach to complex problems. The theory of CBR, as well as the advantages and disadvantages of CBR, has been discussed above. Figure 19 illustrates phase 1 of the creation of a design target for a medical ward. To achieve this, select the functional unit (department) that you want to work with. Drag from object 1 and Drop at 2.

You will notice that only one line is inserted, because the FUNCTIONAL UNIT DESIGN TARGET panel is by default in Only Planning Unit mode. You can expand the list into individual functional units by clicking on the radio button. The heading will turn blue and confirm that you are now in Planning and Functional Unit mode. Instead of 11 only one item will now be displayed (Figure 19).

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

19

Figure 19: Create design target from FUNCTIONAL UNIT LIST phase 1 (Drag from 1 and Drop at 2)

Figure 20 illustrates how an expanded list for the medical departments looks. One department expanded into 11 sub-items called functional units. Each functional unit represents a different planning unit. Each department should have at least four functional units, i.e. workspace, workspace support, core, and structure. However, in many cases there will be more depending on the complexity of the department.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

20
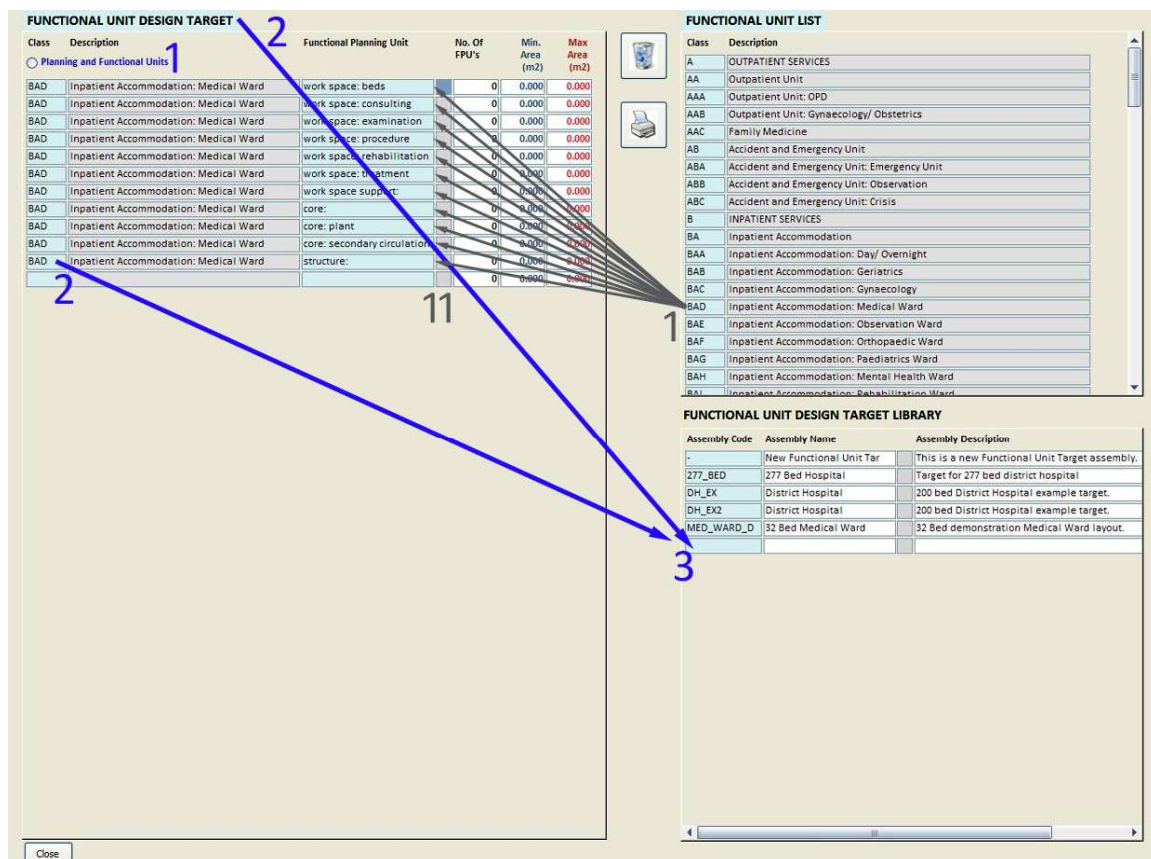
Figure 20: Create design target from FUNCTIONAL UNIT LIST phase 2

You can now proceed to fill in the No. of FPUs, Min. Area (m²) and the Max Area (m²) fields. This is a time-consuming process and requires a very high level of skill to accomplish. It is assumed that an indication of the number of planning and functional units would be available from the output of the infrastructure optimisation planning toolkit (IOPT).

Once specific targets have been set, you may save the target for future use. Two possibilities are supported. You can Drag from 2 (FUNCTIONAL UNIT DESIGN TARGET) and Drop at 3, or you can Drag from 2 (**FUNCTIONAL UNIT DESIGN TARGET** Class object) and Drop at 3. The former will transfer or save the complete contents of the **FUNCTIONAL UNIT DESIGN TARGET** into the **FUNCTIONAL UNIT DESIGN TARGET LIBRARY** and the latter will only transfer the specific department where you start the Drag from. This provides the designer with a lot of flexibility.

Note that a default name is allocated to the design target when it arrives in the **FUNCTIONAL UNIT DESIGN TARGET LIBRARY**. The Assembly Code = '**-**', the Assembly Name = '**New Functional Unit Target Assembly**' and the Assembly Description is '**This is a new Functional Unit Target assembly.**' These general default descriptions need to be renamed to something that precisely describes the intent and characteristics of the particular design target.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

21

THE ESPACE PARAMETRIC RULE DEFINITION AND AD HOC SPATIAL ANALYSIS LANGUAGE

Introduction

The ESPACE rule and ad hoc query definition language is a simple (not as extensive as Java, C or Visual Basic .NET) and flexible interpretive[1] language that is used as part of the *FAST* system to analyse spatial usage directly and to formulate rules to derive the area of spaces that vary their size, depending on a specific context. It can be used to compare a particular facility against any number of norms, or even other facilities.

For the development of ESPACE applets a special interactive code developer is provided that can be used to create ad hoc requests and/or to develop code that will be used in the norms formulation. (Figure 21) In terms of ESPACE a rule or ad hoc query applet is an autonomous, limited size code fragment that can be used to formulate ad hoc spatial queries or it can be used in the norms rule formulation itself.
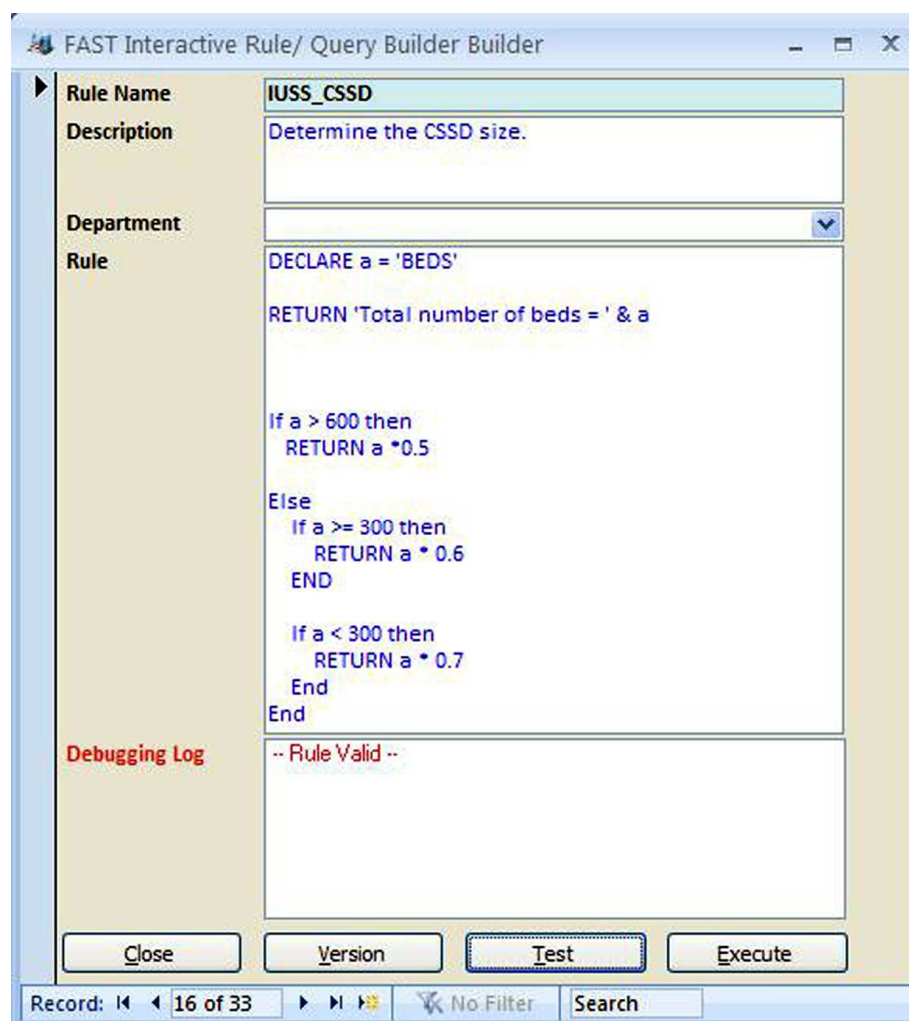
Figure 21: *FAST* interactive rule and ad hoc query builder

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[1] The ESPACE rule is executed line-by-line when the Execute button is pressed in the Interactive Query Builder/Debugger or when a derived space is dragged-and-dropped into the DESIGN ASSEMBLY area of FAST.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

22

Although applets can theoretically be developed for any facility hierarchical level such as facility, building, floor or space, the interactive Query Builder/Debugger supports testing of applets only at facility level. At the moment *FAST* only supports design analysis at facility level, because the **DESIGN ASSEMBLY** system does not support other levels such as building, floor or space. As the need arises in future, the development team might consider the further expansion and support of hierarchical facility levels to support more advanced analysis.

The ESPACE interactive language

The ESPACE language is described in detail below. It contains powerful high level functions that would normally have required very complex database structured query language (SQL) queries to achieve the same result. It also contains logical control structures normally found in any language such as an *If Then Else End* control structures. Variables are created with the DECLARE function and results are returned with the RETURN function.

When an applet is developed in the Interactive Query Builder, results are displayed in a pop-up window. (Figure 22) When the same code is placed in the Area Calculation Rule textbox of the Functional Space Classification form, the code is executed whenever the user drag-and-drop the particular space type into the DESIGN ASSEMBLY area. The result appears in the area field and is highlighted in yellow (Figure 23) to indicate that the derived answer in m² is the result of a calculation or rule.

If no applets have been defined for a particular classification category or space type, then the Area m² will not be filled in automatically. If no formula has been defined for a space type and no static area has been allocated then nothing will be displayed.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

23
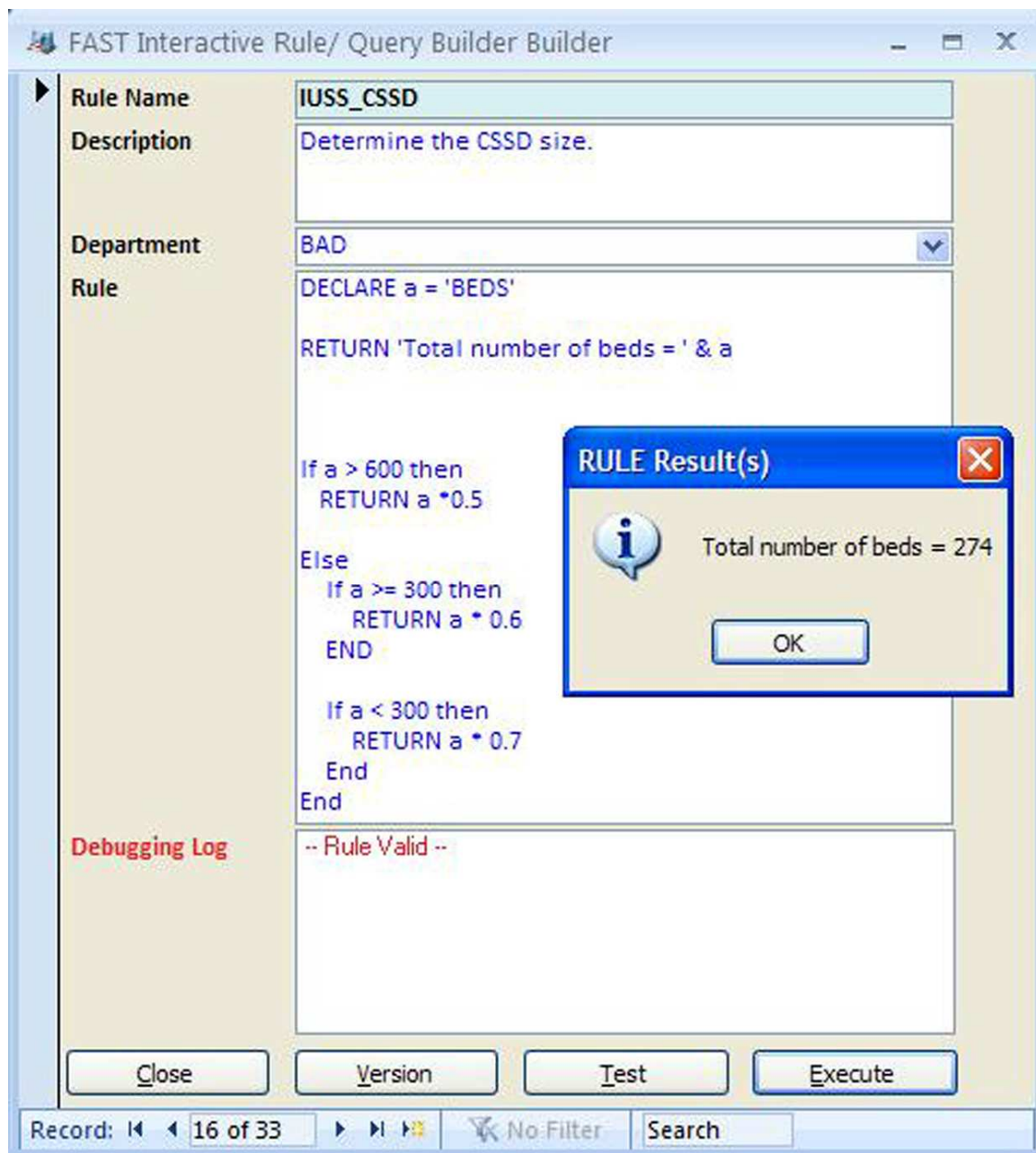
Figure 22: Result of query in interactive environment

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

24

Figure 23: The yellow highlighted block indicates that the area in m² is the result of a resolved rule

How to develop an ESPACE applet

The discussion below describes how to develop an ESPACE applet. Although *FAST* is delivered with a fully functional set of ESPACE applets, it might be necessary from time to time to modify the existing norms or to create ad hoc queries for particular purposes. Please refer to Table 5 for a summary of all available ESPACE functions.

Assume that an applet needs to be developed that will return the percentage of core area in a health facility. Assume that the designer aims to achieve a % somewhere between 32.51% and 35.94%. The current Khayelitsha Hospital has a core percentage of 34.23%. To activate the *FAST* Interactive Query Builder/Debugger, select the *FAST* Rule Builder option on the Rule Definition tab of the *FAST* Main Form.

Create a new applet record by selecting the ▶✳ action button on the form. Choose an appropriate name for the applet and enter it in the Program Name field. Enter an appropriate description for the applet such as "This applet returns the percentage of core area. In this case we are aiming for something that should be between 32.51% and 35.94%" to describe the exact purpose or function of the applet.

The next field can be left open at this stage because the applet must first be developed before a specific department can be selected for testing and more specific analysis purposes.

The purpose of the applet is to return the percentage of core area. ESPACE has a high level function CORE that will return all spaces that have a top level classification category of C. Seeing the percentage core in relation to the workspace area, the applet calculates the actual workspace area. In the ESPACE functional space classification, category A contains categories that are closely related to, but are not actually workspace area. The solution to this is to use the high level WORK_SPACE function and to subtract the spatial types that must not be included. The first step is therefore to declare temporary variables to contain these values.

STEP 1: Declare applet variables

```
DECLARE a = 'WORK_SPACE'
DECLARE c = 'CORE'

DECLARE e = '~AB'
DECLARE f = '~AC'
DECLARE g = '~AD'
```

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

25

STEP 2: Calculate percentage core space

```
RETURN c/(a - (e+f+g)) * 100.0
```

The RETURN statement will display the result of the calculation. This is useful in the interactive debugging and testing environment. However, when the applet is placed in the norms definition environment, this program statement can be disabled by placing a // in front of the statement. The statement will then look like this:

```
// RETURN c/(a - (e+f+g)) * 100.0
```

Core is calculated by dividing the amount of core area (contained in variable **c**) by the amount of workspace area (contained in variable **a**). The amount of workspace area is adjusted by subtracting all shared/communal (~AB), public interface (~AC) and technical/special (~AD) areas. Note the use of the '~'. This indicates that all spatial type categories lower down in the hierarchy, including the actual classification category, must be included. This is a convenient shorthand method in the case of ~AB to include AB, ABA, ABB, ABC, ABD, ABE, ABF and ABG. If you want just one particular category and nothing else, use the _AB notation.

STEP 3: Calculate result to be returned

```
IF c/(a - (e+f+g)) * 100.0 > 35.94 THEN
    RETURN '> 35.94%'
ELSE
    RETURN '< 35.94%'
END
```

The applet is now complete and can be tested. Before the applet is tested make sure that the **DESIGN ASSEMBLY** area of the Create Design (Space ASSEMBLY DASHBOARD) contains some realistic data, facility, assembly or set of desired spaces. Select the Parse button to check the code and run the applet. If there was a logical error in the code, then this will be reported in the Log field, for example:

SYNTAX ERROR. Line 14. Expecting: EOF - &) * / + < <= <> == > >= declare do else end if read return then while

If no errors were found then the log will report

-- Applet Valid –

You can now proceed and analyse other facilities. This particular example can only be used in the interactive environment, because it does not return an area. If you formulate a rule for use in DESIGN ASSEMBLY area, the applet must be rule that returns an area. Furthermore, it must only return one result, because the area field can only contain one answer.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

26

Table 5: Summary of ESPACE functions

Special ESPACE functions			
ESPACE function	**Hierarchical level[2]** *1* = facility *2* = building *3* = floor *4* = space	**Examples**	**Comments**
FACILITY_LEVEL	1	DECLARE d = 'FACILITY_LEVEL'	Returns the level of the particular health facility as defined in the 'Designated Level of Facility' field of the Current Health Facility form.
FLOORS	*1, 2*	DECLARE a = 'FLOORS' RETURN a	At level 1 it returns all floors in the facility. At level 2 it returns only the floors within the current building.
ALL_PERSONS	*1*	DECLARE a = 'ALL_PERSONS' RETURN a	Returns the number of persons in the entire facility.
PERSONS	*1, 2, 3 or 4*	DECLARE a = 'PERSONS' RETURN a	Returns the total number of persons at the current hierarchical level.
PERSONS(_A to _DE or ~A to ~DE)	*1, 2, 3 or 4*	DECLARE a = 'ALL_PERSONS' DECLARE b = 'PERSONS(~AAA)' DECLARE c = 'PERSONS(~AAB)' DECLARE d = 'PERSONS(~AAD)' DECLARE e = 'PERSONS(~AAD)' RETURN a RETURN b RETURN c RETURN d RETURN e	Returns the number of persons in a specific classification category or classification hierarchy.
WORK_SPACE	*1*	// Total amount of workspace area per person DECLARE a = 'ALL_PERSONS' DECLARE b = 'WORK_SPACE' DECLARE c = 'WORK_SPACE_SUPPORT' DECLARE d = 'CORE' DECLARE e = 'STRUCTURE' DECLARE f = b+c+d+e RETURN 'Category Workspace (A) = ' RETURN b	Returns all the workspace (category A) space in the entire facility.

---

[2] In the *FAST* software environment only one hierarchical level is supported, because the concept of building, floor and space does not exist. The only level supported is Facility Level.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

27

IUSS

		RETURN 'Category Workspace Support (B) = ' RETURN c RETURN 'Category Core (C) = ' RETURN d RETURN 'Category Structure (D) = ' RETURN e RETURN 'Number of Persons = ' RETURN a RETURN 'Total Floor Area = ' RETURN f RETURN 'Space per Person = ' RETURN f/a	
WORK_SPACE_SUPPORT	*1*	See above	Returns all the workspace support (category B) space in the entire facility.
CORE	*1*	See above	Returns all the core (category C) space in the entire facility.
STRUCTURE	*1*	See above	Returns the structural area (category D) for the entire facility. It includes both external and internal walls.
BEDS	*1*	DECLARE a = 'BEDS' RETURN 'Total number of beds = ' & & a	Returns the total number of beds in the facility. The *PeopleCodes* field value of 'M001' in the <Space_ASSEMBLY> table is used to recognise beds.

FACILITY_LEVEL	1	// Calculate CAAG
		
		 DECLARE a = '@?'
		 DECLARE b = 'AREA_DEPARTMENT_SPACETYPE(?,CAAG)'
		 DECLARE c = 'AREA_DEPARTMENT_SPACETYPE(?,D)'
		 DECLARE d = 'FACILITY_LEVEL'
		
		 IF (d >= 3) THEN
		    RETURN (a-b-c)*0.28829690
		 ELSE
		    RETURN (a-b-c)*0.28829690
		 END
			Returns the level of the facility as a whole number (integer) selected on the Define Facility form. The values returned are described in detail in Table 6. The function reads the *TypeOfHealthFacility* field of the <CurrentFacility> database table.

		See above	Returns the sum of the area for only the

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

28

_A to _DE	*1, 2, 3 or 4*		specific classification. The classification must be prefixed with a '_' to indicate to the ESPACE interpreter that a space category rather than a variable is intended.
~A to ~DE	*1, 2, 3 or 4*	See above	Returns the sum of the area for the hierarchical family of space classifications where the particular classification is at the top of the hierarchy. The required classification family must be prefixed with a '~' to indicate to the ESPACE interpreter that a space category rather than a variable is intended.
@A to @J	*1*	DECLARE a = '@BAD' DECLARE b = '@?' RETURN 'Area for only department BAD = ' & a RETURN 'Area for any department with late binding = ' & b	Returns the sum of the area for only the specific department classification. The classification must be prefixed with a '@' to indicate to the ESPACE interpreter that a department category rather than a variable is intended.
#A to #J	*1*	DECLARE a = '#BAD' DECLARE b = '#?' RETURN 'Area for hierarchy under BAD = ' & a RETURN 'Area for hierarchy under BAD with late binding = ' & b	Returns the sum of the area for the hierarchical family of department classifications where the particular classification is at the top of the hierarchy. The required classification family must be prefixed with a '#' to indicate to the ESPACE interpreter that a space category rather than a variable is intended.
?	*1*		This is the late binding symbol used for depart-ment/functional unit

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

29

IUSS

			specifically. This means that the relevant department is only provided at runtime when the particular department is known within the specific context. This is very economical, because only one applet can be developed and used universally.
General ESPACE functions			
Comment Start = '/*' **Comment End = '*/'** **Comment Line = '//'**	n/a	// Development and debug code	Provides a means to comment parts of the applet.
DECLARE	n/a	DECLARE a = 12 DECLARE b = 'ALL_PERSONS' DECLARE c = 'PERSONS(~AAC)' DECLARE d = '_AAC'	Creates new variables. The first character must be alphabetic. Different declarations are possible depending on the desired result. The variables are case-insensitive and the length is virtually unlimited. Practical considerations will however limit it to no more than 10 alphanumeric characters.

RETURN	n/a	IF f/a > 12 THEN
		    RETURN '>'
		ELSE
		    RETURN '<'
		END
			Returns the result of an evaluation. If the first character returned is a '<' or '>' then the answer will be coloured green or red.

If Then End
If Then Else End
	n/a	IF f/a > 12 THEN
		    RETURN '>'
		ELSE
		    RETURN '<'
		END
			Provides logical control in the applet.

While Do End	n/a	DECLARE a = 12
		
		WHILE (a > 1) DO
		    DECLARE a = a -1
		    RETURN a
		END
			Provides an alternative to the If Then End or If Then Else End structure. Note the use of the RETURN to decrement the value being tested for.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

30

IUSS

+, -, *, /	n/a	IF (a/12)+(3.14*2) > 24 then
		    RETURN '>'
		ELSE
		    RETURN '<'
		END
			Plus, minus, multiply and divide can be used in any expression with or without nesting brackets.

&	n/a	RETURN ((a/b) * 100) & ' %'	This is useful to concatenate strings or to append special symbols to an answer. Enclose the numerical part between braces; otherwise unexpected results may be produced.
<, <=, >=, ==, <>	n/a	If (a >= 12) THEN RETURN 'larger or equal 12' END	These operators are available for comparisons.

Example of an ESPACE applet

To develop a new ESPACE applet or edit an existing one, go to the ESPACE Interactive Query Builder/Debugger. Access to this utility is found on the Rule Definition tab of the *FAST* Main Menu (Figure 4).

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

31

IUSS
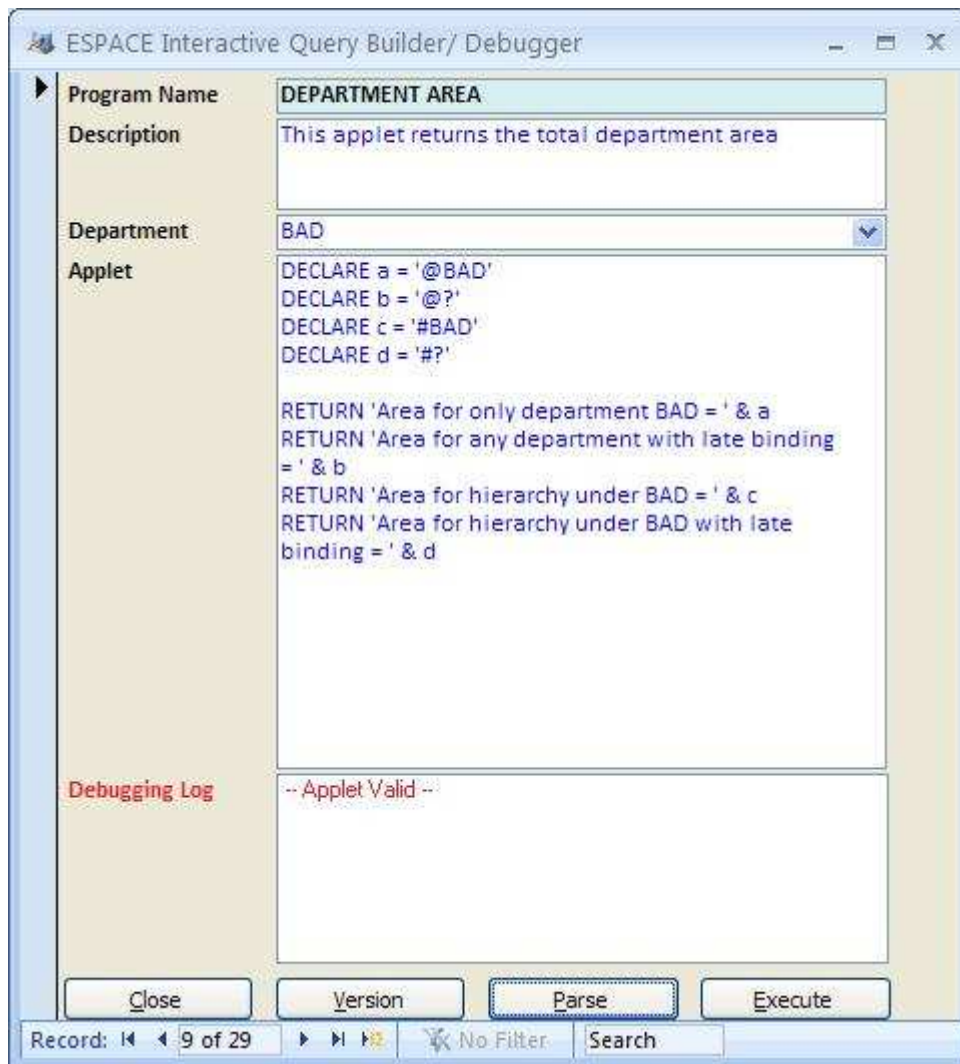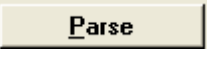
Figure 24: ESPACE applet to calculate department areas

Press the button to open the Interactive Query Builder. To create new applets select the ▶✳ button at the bottom of the form. Fill in an appropriate name in the Program Name field. This name should describe what the applet does, for example **DEPARTMENT AREA**. The description field offers the opportunity to describe in a little bit more detail what the purpose of the applet is for example

This applet returns the total department area

The current contents (list of spaces) of the DESIGN ASSEMBLY are used during debugging to run the code. (Figure 24) Before an applet can be fully tested, select a current department from the dropdown list in the

interactive debugger. To test an applet for valid syntax, press the **Parse** button. If the test is successful then the words **-- Applet Valid --** will be displayed in the **Debugging Log** field. If the user failed to select a particular department beforehand, then the late binding symbol[3] '?' will be undefined. This means that the applet is valid; however it cannot return any values, because it does not know for which department you want to run the applet for.

An ESPACE rule or ad hoc query consists of three main sections and is created in the applet section (Figure 25):

---

[3] Late binding means a value is only known at a late stage, i.e. when the code executes. This makes the applet very flexible, because it can be used in any context.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

32

1. Declare section
2. Calculation section
3. Return or result section
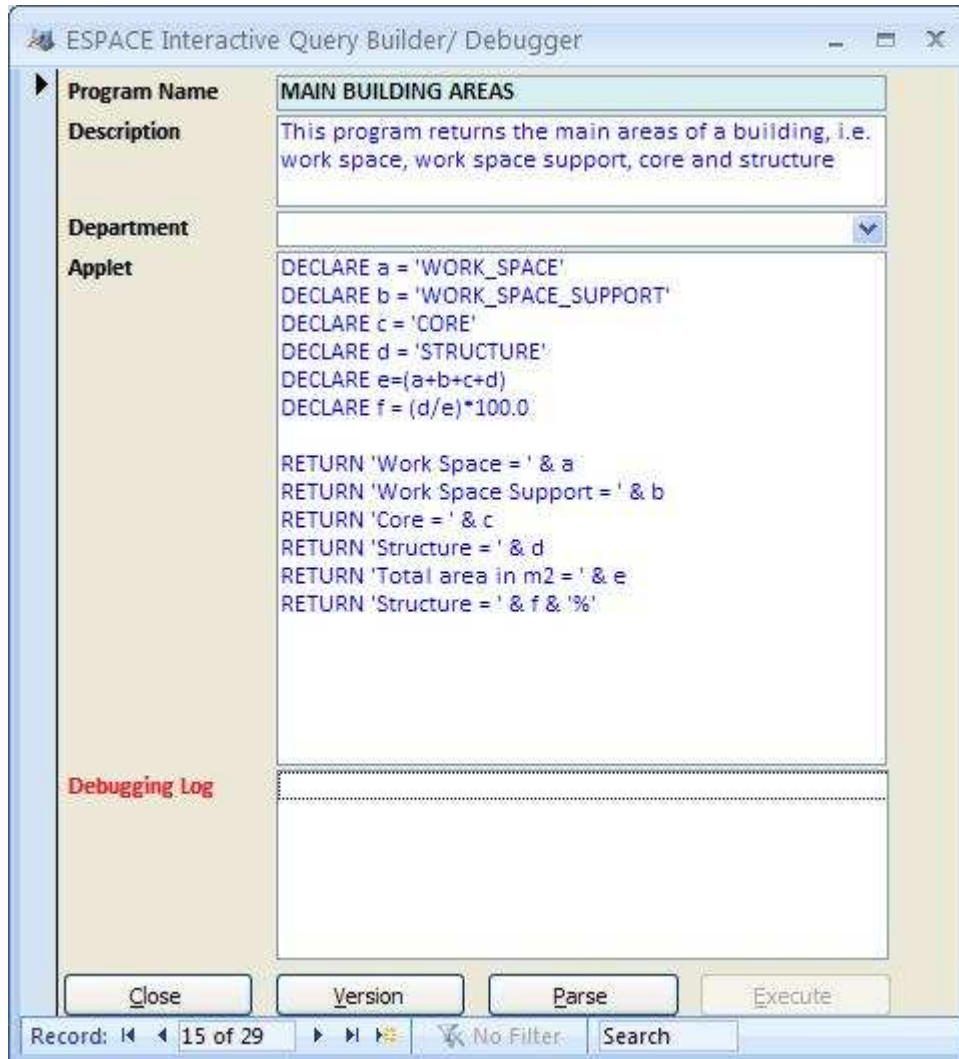
Figure 25: The applet section of the Interactive Query Builder

In the **DECLARE** section all the variables to accomplish the calculations are defined. In this case six variables have been defined. Although there is virtually no limitation to the length of the variable names, it should not be too long. For ease of use there is no difference in the declaration for numerical or text variables. For this reason users should use variables in a sensible descriptive way. For example, one should not try and add a string such as **'Workspace'** to a numeric value such as **5** and expect a realistic result. If you want to display a friendly description concatenated to a numeric answer use the **&** operator, for example **'Workspace Support = ' & b.** It is good style to use braces around variables such as **d/e**. This ensures that a calculation is bound together correctly, before attempting to concatenate the result to some descriptive text.

In the example there is no formal calculation section, because the applet is relatively simple. For debugging purposes some **RETURN** statements can be included to progressively check the correctness of the applet. Once the applet is properly tested the debugging statements can be commented out with '**/***' and '***/**' or '**//**' on each comment code line.

The final section is the **RETURN** section where the results of the applet are displayed. If the applet will be used in the rule-based environment in the **DESIGN ASSEMBLY** area then only one result must be returned,

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

33

because the area field can obviously only contain on value at a time. If the applet will only be used in the interactive environment for analysis or enquiry purposes, then multiple results can be returned to analyse the spatial characteristics. In the example the final output of the results are displayed with six RETURN statements.

ESPACE knows in which execution mode it is running, i.e. interactive mode (debugging or ad hoc query) or rule interpretation mode in the **DESIGN ASSEMBLY** area. In the interactive applet development environment, output is displayed in a small pop-up window. When a user drags and drops a space with a rule attached to it into the *FAST* **DESIGN ASSEMBLY** area, the results are returned in the area field of the **DESIGN ASSEMBLY** section of the Create Design form. It is highlighted in yellow to indicate that the result is based on an ESPACE formula.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

34

APPENDIX A – FORMAL ESPACE LANGUAGE SPECIFICATION

Below is the formal Backus-Naur syntax specification for the ESPACE ad hoc query and rule definition language used in *FAST*. The ESPACE language implementation for the IUSS project was developed by means of the GOLD (Grammar Oriented Language Developer) Parser Builder version 5.2.0, written by Devin Cook. (Cook, 1997)

```
"Name"    = 'ESPACE'
"Author"  = 'D.C.U. Conradie'
"Version" = '1.0'
"About"   = 'ESPACE is designed to handle parametric space planning analysis and norms'

"Case Sensitive" = False
"Start Symbol"   = <Statements>

{String Ch 1} = {Printable} - ['']
{String Ch 2} = {Printable} - ["]

{ID Tail} = {Alphanumeric} + [_]

Id        = {Letter}{Alphanumeric}*

! String allows either single or double quotes

StringLiteral = ''  {String Ch 1}* ''
             | ""  {String Ch 2}* ""

NumberLiteral = {Digit}+('.'{Digit}+)?

Comment Start = '/*'
Comment End   = '*/'
Comment Line  = '//'

<Statements> ::= <Statement> <Statements>
        | <Statement>

<Statement>  ::= return <Expression>
        | return <Expression> read ID
        | declare ID '=' <Expression>
        | while <Expression> do <Statements> end
        | if <Expression> then <Statements> end
        | if <Expression> then <Statements> else <Statements> end

<Expression>  ::= <Expression> '>'  <Add Exp>
        | <Expression> '<'  <Add Exp>
        | <Expression> '<=' <Add Exp>
        | <Expression> '>=' <Add Exp>
        | <Expression> '==' <Add Exp>
        | <Expression> '<>' <Add Exp>
        | <Add Exp>

<Add Exp>     ::= <Add Exp> '+' <Mult Exp>
        | <Add Exp> '-' <Mult Exp>
        | <Add Exp> '&' <Mult Exp>
```

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

35

IUSS

```
        | <Mult Exp>

<Mult Exp>   ::= <Mult Exp> '*' <Negate Exp>
        | <Mult Exp> '/' <Negate Exp>
        | <Negate Exp>

<Negate Exp>  ::= '-' <Value>
        | <Value>

<Value>      ::= ID
        | StringLiteral
        | NumberLiteral
        | '(' <Expression> ')'
```

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

36

IUSS

APPENDIX B - INTERFACING TO OTHER SYSTEMS

FAST does not exist on its own and therefore needs a method to import information from other systems, such as external CAD-systems, Quantity Surveyor software, CodeBook and spreadsheets. This appendix describes the comma delimited flat file structure that facilitates this.

Figure 26 illustrates the required structured fields to export information into *FAST* from CAD-systems such as *AutoCAD*, *Revit* and *CADDIE*. A record in this standard will contain either six or seven comma delimited fields, depending on the type of record. Table 6 illustrates how the comma delimited file for a small clinic looks that conforms to the structure illustrated in Figure 26.
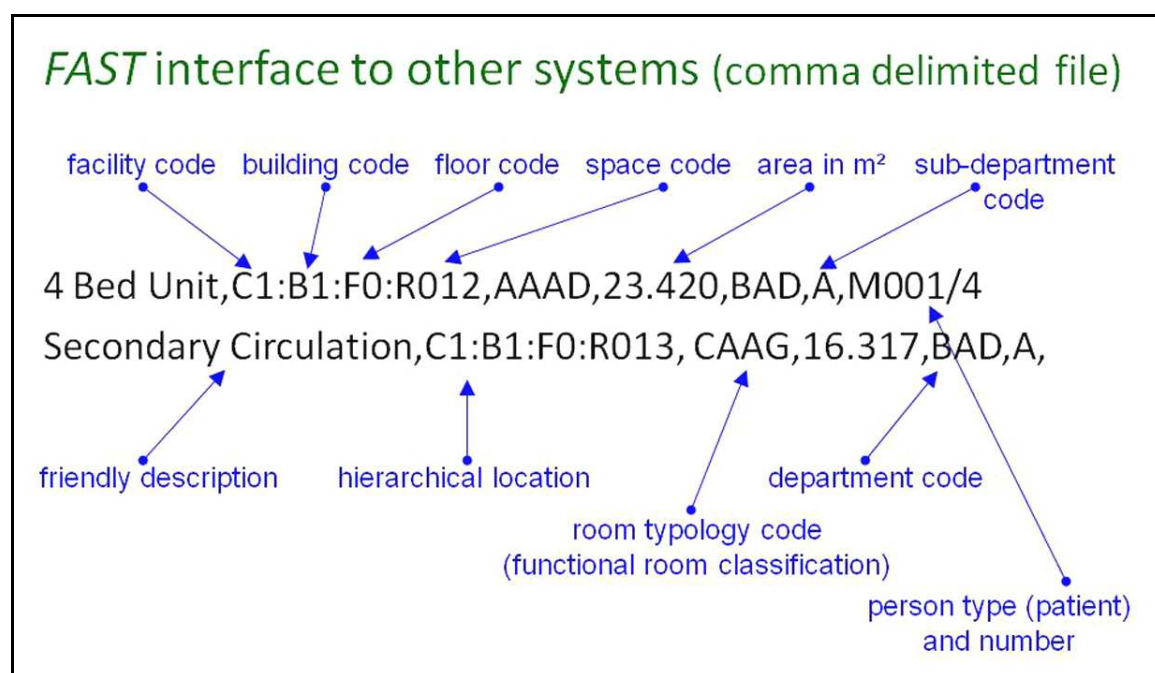

Figure 26: The FAST comma delimited interface standard

Table 6 provides detail about the *FAST* comma delimited exchange standard fields. Please note that the fields are separated with a '**,**' and if there is no person type field, the last field ends with a '**,**'. The various parts of the hierarchical structure for the hierarchical location are concatenated with the '**:**' symbol.

Table 6: The *FAST* comma delimited exchange format

Field	Description
Friendly Description	Short description of the particular room.
Facility Code	A facility code. One facility can contain many buildings, floors and spaces.
Building Code	A building code. The building code is separated from the facility code with a ':' separator. This is the second level in the facility hierarchy. A facility might contain one or many buildings.
Floor Code	A floor code. The floor code is separated from the building code with a ':' separator. This is the third level of the facility hierarchy. One building can contain one or many floors in a high-rise health facility.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

37

Field	Description
Space Code	A space code. The space code is separated from the floor code with a ':' separator. This code is selected from the IUSS Functional Space Classification, e.g. **AAAD.**
Area in m²	This is the net area in m² of the facility. It should be to 3-decimal accuracy to ensure adequate accuracy.
Department Code	The department code must be selected from the IUSS Department Classification.
Sub-Department Code	The sub-department code gives an indication of how contiguous the spaces in a department are. If all the spaces that make up a department are together, then all the spaces would have a sub-department code of A. However, if the department is fragmented in three main areas, then area 1 would be indicated with a '**A**', area 2 with a '**B**' and area 3 with a '**C**'.
Person Type and Number	This field should only be used for clinical rooms that have a bed unit. It should not be used for treatment and consulting rooms that might also contain a bed. The code for a patient is '**M001**'. This is followed by the '**/**' delimiter and the number of beds in a bed unit, for example 4.

Table 7: Example of a *FAST* comma delimited file that contains all the spaces for a small clinic

Garden Store,C1:B1:F0:R001,BGK,3.77,AA,A,
Dirty Utility,C1:B1:F0:R002,BMC,5.92,AA,A,
WC Staff,C1:B1:F0:R003,BEC,2.98,AA,A,
WC Staff,C1:B1:F0:R004,BEC,1.8,AA,A,
Kitchen Staff,C1:B1:F0:R005,BQ,9.95,AA,A,
Sub-Waiting Area,C1:B1:F0:R006,CAAK,26.74,AA,A,
Entrance Lobby,C1:B1:F0:R007,CAAM,11.73,AA,A,
Waiting Area,C1:B1:F0:R008,CAAK,31.36,AA,A,
Toilet Lobby,C1:B1:F0:R009,CAAM,5.62,AA,A,
Male Toilets,C1:B1:F0:R010,BEAA,2,AA,A,
Male Toilets,C1:B1:F0:R011,BEAA,9.02,AA,A,
Disabled Toilet,C1:B1:F0:R012,BE,4.22,AA,A,
Female Toilets,C1:B1:F0:R013,BEAB,2,AA,A,
Female Toilets,C1:B1:F0:R014,BEAB,2,AA,A,
Female Toilets,C1:B1:F0:R015,BEAB,7.34,AA,A,
Waiting Area External,C1:B1:F0:R016,CAAK,21.41,AA,A,
Reception,C1:B1:F0:R017,BAA,4.44,AA,A,
Play Area,C1:B1:F0:R018,ALG,7.13,AA,A,
Walk-In C.B.D,C1:B1:F0:R019,BGB,5.17,AA,A,
Room Treatment,C1:B1:F0:R020,AJA,15.26,AA,A,
Room 1 Consulting,C1:B1:F0:R021,AFA,15.26,AA,A,
Room 2 Consulting,C1:B1:F0:R022,AFA,15.26,AA,A,
Home Based Care,C1:B1:F0:R023,AHA,15.26,AA,A,
Passage,C1:B1:F0:R024,CAAB,32.84,AA,A,
Counselling Room,C1:B1:F0:R025,AGA,15.42,AA,A,
Room Triage/Observation,C1:B1:F0:R026,AAJ,12.53,AA,A,
Paraplegic WC,C1:B1:F0:R027,BE,3.24,AA,A,

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

38

```
Medicine Store,C1:B1:F0:R028,BP,8.32,AA,A,
Private Consult,C1:B1:F0:R029,AFA,4.92,AA,A,
Area Medicine Waiting,C1:B1:F0:R030,CAAK,10.2,AA,A,
Dispensary,C1:B1:F0:R031,BP,19.47,AA,A,
Scheduled Medicine Store,C1:B1:F0:R032,BP,4.4,AA,A,
Receiving/Holding,C1:B1:F0:R033,BPG,5.23,AA,A,
Food Parcels Store,C1:B1:F0:R034,BQR,5,AA,A,
Passage,C1:B1:F0:R036,CAAB,12.49,AA,A,
Structure,C1:B1:F0:R037,DA,471.52,I,A,
```

If the *FAST* comma delimited exchange file conforms to the standards above, you can import it directly into the **FAST ASSEMBLY LIBRARY** by going to the **System Administration** tab of the **FAST Main Form**. Select the **Import .txt, .dat or.csv file File Into *FAST*** option. The screen illustrated below in Figure 27 appears.
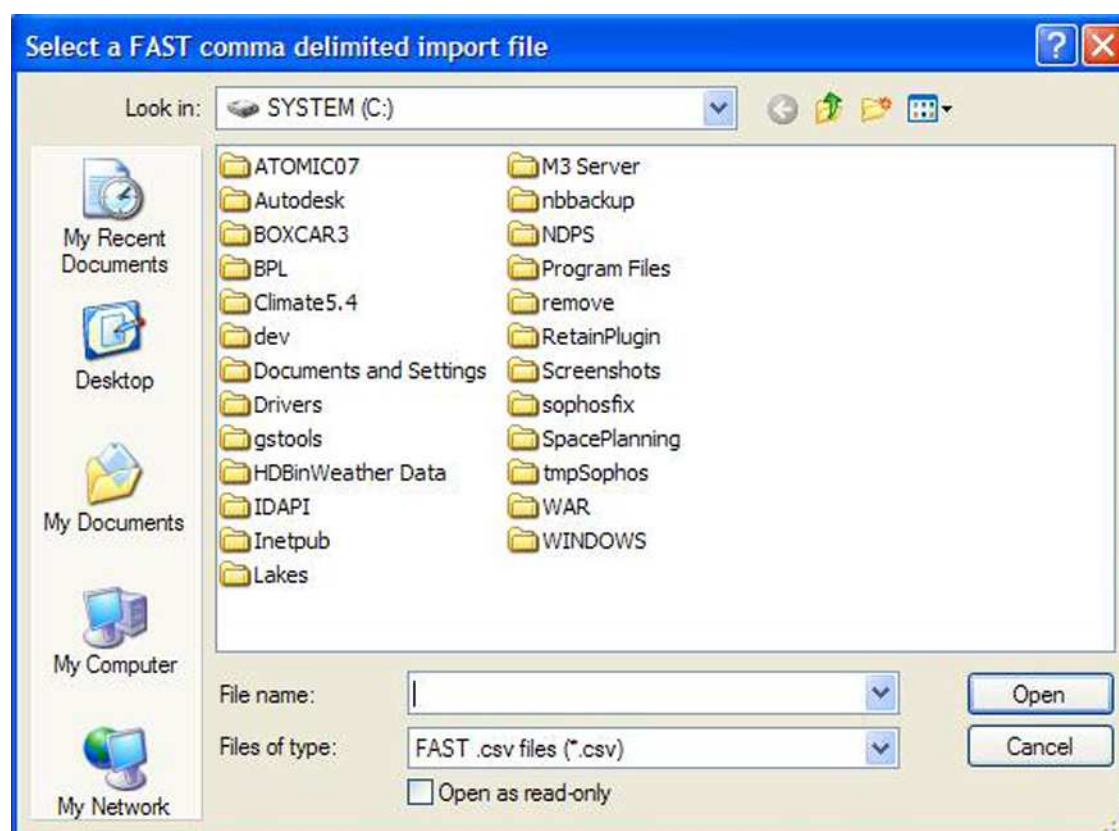
Figure 27: Select a *FAST* comma delimited import file

Choose an appropriate file extension with the dropdown indicated as 'Files of type'. Three types of extension are supported, i.e. .txt, .dat and .csv. Also navigate to the directory where the input file is located.

The screen illustrated with Figure 28 appears.

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

39
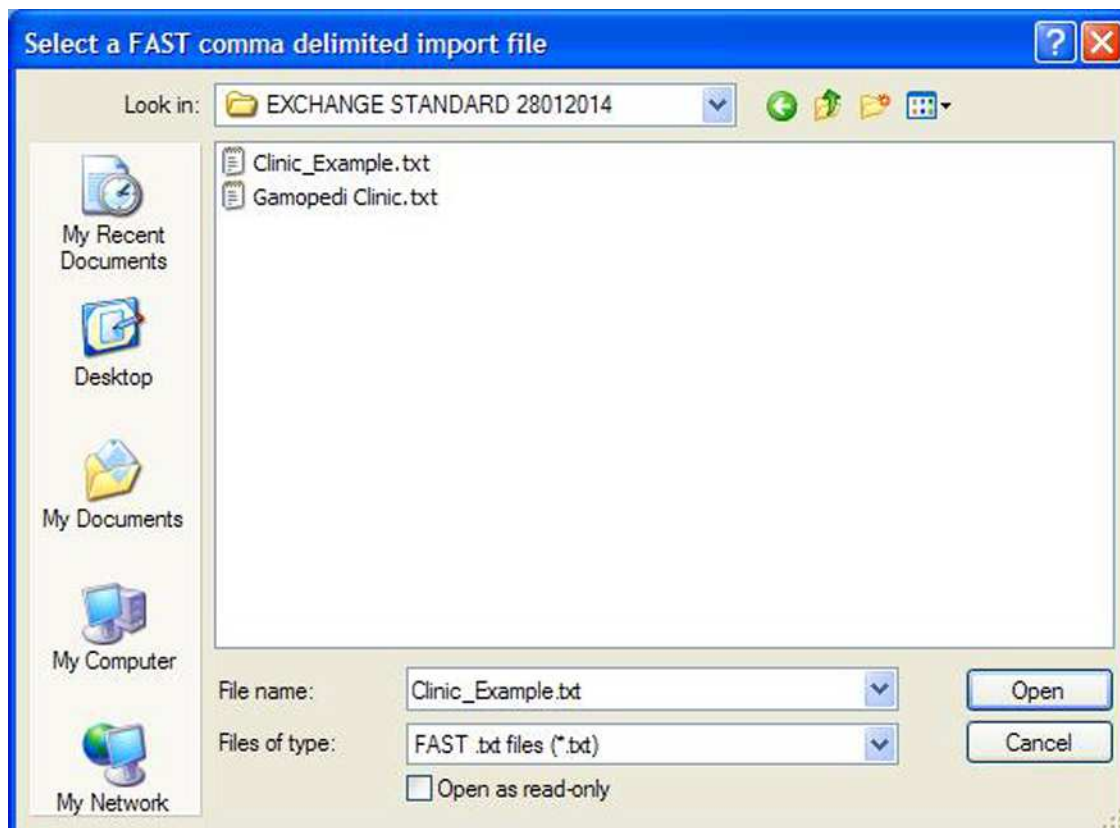
Figure 28: Select a comma delimited file with a .txt extension

In the example two files are displayed. Select the Clinic_Example.txt file and select the Open command button. The screen illustrated in Figure 29 appears. Select OK to continue the import. The data is imported into the **ASSEMBLY LIBRARY**. After import you can rename the **Assembly Code**, **Assembly Name** and **Assembly Description** fields to suit your particular description and naming conventions.
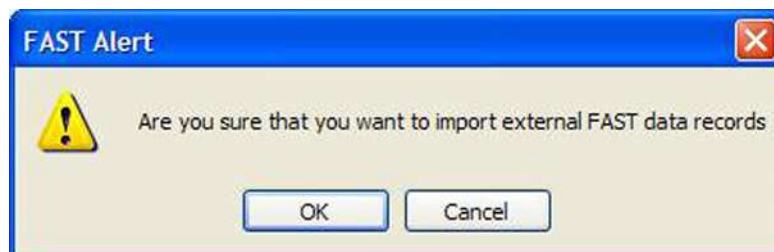
Figure 29: Confirm import of *FAST* comma delimited import file

INFRASTRUCTURE UNIT SUPPORT SYSTEMS (IUSS) PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[PROPOSAL DRAFT 1.0]

40

APPENDIX C – FUNCTIONAL SPACE CLASSIFICATION

Room Detail Library

A   WORK SPACE

A   WORK SPACE

Classification	Detailed Description	Description	Planning Unit	Area (m2)
A	WORK SPACE	WORK SPACE	work space:	

AA   WORK SPACE: PATIENT ROOM

Classification	Detailed Description	Description	Planning Unit	Area (m2)
AA	WORK SPACE: PATIENT ROOM	PATIENT ROOM	work space: beds	
AAA	WORK SPACE: PATIENT ROOM: Ward	Ward	work space: beds	
AAAA	WORK SPACE: PATIENT ROOM: WARD: 1 Bed Unit Excl Ensuite	1 Bed Unit Excl Ensuite	work space: beds	14.145
AAAB	WORK SPACE: PATIENT ROOM: WARD: 2 Bed Unit Excl Ensuite	2 Bed Unit Excl Ensuite	work space: beds	25.83
AAAC	WORK SPACE: PATIENT ROOM: WARD: 3 Bed Unit Excl Ensuite	3 Bed Unit Excl Ensuite	work space: beds	34.02
AAAD	WORK SPACE: PATIENT ROOM: WARD: 4 Bed Unit Excl Ensuite	4 Bed Unit Excl Ensuite	work space: beds	42.21
AAAF	WORK SPACE: PATIENT ROOM: WARD: 6 Bed Unit Excl Ensuite	6 Bed Unit Excl Ensuite	work space: beds	60.39
AAB	WORK SPACE: PATIENT ROOM: Maternity Wards	Maternity Wards	work space: beds	
AAC	WORK SPACE: PATIENT ROOM: Critical Care & Special Units	Critical Care & Special Units	work space: beds	
AAD	WORK PLACE: PATIENT ROOM: Mental Health Wards	Mental Health Wards	work space: beds	
AADA	WORK PLACE: PATIENT ROOM: MENTAL HEALTH WARDS: 1 Bed Ensuite	1 Bed Unit Ensuite	work space: beds	9.75
AADB	WORK PLACE: PATIENT ROOM: MENTAL HEALTH WARDS: 2 Bed Ensuite	2 Bed Unit Ensuite	work space: beds	9.75
AADC	WORK PLACE: PATIENT ROOM: MENTAL HEALTH WARDS: 3 Bed Ensuite	3 Bed Unit Ensuite	work space: beds	33.39
AADD	WORK PLACE: PATIENT ROOM: MENTAL HEALTH WARDS: 4 Bed Ensuite	4 Bed Unit Ensuite	work space: beds	43.47
AADE	WORK PLACE: PATIENT ROOM: MENTAL HEALTH WARDS: 5 Bed Ensuite	5 Bed Unit Ensuite	work space: beds	57.02
AADF	WORK PLACE: PATIENT ROOM: MENTAL HEALTH WARDS: 6 Bed Ensuite	6 Bed Unit Ensuite	work space: beds	67.88
AADG	WORK PLACE: PATIENT ROOM: MENTAL HEALTH WARDS: Psychiatric Disabled Ensuite Patient Room	Psychiatric Disabled Ensuite Pati	work space: beds	67.88
AADH	WORK PLACE: PATIENT ROOM: MENTAL HEALTH WARDS: Psychiatric Ensuite	Psychiatric Ensuite	work space: beds	67.88
AAE	WORK PLACE: PATIENT ROOM: Other	Other	work space: beds	
AAF	WORK PLACE: PATIENT ROOM: Emergency Unit	Emergency Unit	work space: beds	
AAG	WORK PLACE: PATIENT ROOM: Paediatric	Paediatric	work space: beds	
AAH	WORK PLACE: PATIENT ROOM: Care Center Room - Baby	Care Center Room - Baby	work space: beds	
AAI	WORK PLACE: PATIENT ROOM: Delivery Room	Delivery Room	work space: beds	
AAIA	WORK PLACE: PATIENT ROOM: DELIVERY ROOM: PHC - Delivery Room/ Prep/ Ante Natal	PHC - Delivery Room/ Prep/ Ant	work space: beds	
AAJ	WORK PLACE: PATIENT ROOM: Observation Room	Observation Room	work space: beds	
AAJA	WORK PLACE: PATIENT ROOM: OBSERVATION ROOM: PHC - Direct Observation Room/ Sickbay	PHC - Direct Observation Room/	work space: beds	
AAK	WORK PLACE: PATIENT ROOM: Seclusion Room	Seclusion Room	work space: beds	
AAL	WORK PLACE: PATIENT ROOM: Calming Room	Calming Room	work space: beds	
AAM	WORK PLACE: PATIENT ROOM: Observation Ward	Observation Ward	work space: beds	
AAN	WORK PLACE: PATIENT ROOM: Body Holding Room	Body Holding Room	work space: beds	
AAO	WORK PLACE: PATIENT ROOM: Neo Natal Nursery	Neo Natal Nursery	work space: beds	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

41

	Classification	Detailed Description	Description	Planning Unit	Area (m2)
	AAP	WORK PLACE: PATIENT ROOM: Neo Natal Ward	Neo Natal Ward	work space: beds	
	AAPA	WORK PLACE: PATIENT ROOM: NEO NATAL WARD: Neo Natal High Care	Neo Natal High Care	work space: beds	
	AAPB	WORK PLACE: PATIENT ROOM: NEO NATAL WARD: Neo Natal Intensive Care	Neo Natal Intensive Care	work space: beds	
	AAPC	WORK PLACE: PATIENT ROOM: NEO NATAL WARD: Neo Natal Isolation	Neo Natal Isolation	work space: beds	
	AAQ	WORK PLACE: PATIENT ROOM: Bariatric Patient Room	Bariatric Patient Room	work space: beds	
	AAR	WORK PLACE: PATIENT ROOM: PHC - Post Natal Room	PHC - Post Natal Room	work space: beds	
	AAS	WORK PLACE: PATIENT ROOM: PHC - MOU	PHC - MOU	work space: beds	
	AAT	WORK PLACE: PATIENT ROOM: PHC - Emergency Room	PHC - Emergency Room	work space: beds	

AB   WORK SPACE: HIGH CARE WARD BED

	Classification	Detailed Description	Description	Planning Unit	Area (m2)
	AB	WORK SPACE: HIGH CARE WARD BED	HIGH CARE WARD BED	work space: high care beds	
	ABA	WORK SPACE: HIGH CARE WARD BED: Adult	High Care (Adult)	work space: high care beds	
	ABB	WORK SPACE: HIGH CARE WARD BED: Paediatric	High Care (Paediatric)	work space: high care beds	
	ABC	WORK SPACE: HIGH CARE WARD BED: Maternity	High Care (Maternity)	work space: high care beds	

AC   WORK SPACE: ICU WARD BED

	Classification	Detailed Description	Description	Planning Unit	Area (m2)
	AC	WORK SPACE: ICU WARD BED	ICU	work space: icu beds	
	ACA	WORK SPACE: ICU WARD BED: Adult	ICU (Adult)	work space: icu beds	
	ACB	WORK SPACE: ICU WARD BED: Paediatric	ICU (Paediatric)	work space: icu beds	
	ACC	WORK SPACE: ICU WARD BED: Maternity	ICU (Maternity)	work space: icu beds	
	ACD	WORK SPACE: ICU: Baby	ICU (Baby)	work space: icu beds	

AD   WORK SPACE: INCUBATOR

	Classification	Detailed Description	Description	Planning Unit	Area (m2)
	AD	WORK SPACE: INCUBATOR	INCUBATOR	work space:	
	ADA	WORK SPACE: INCUBATOR: Baby	Incubator (Baby)	work space:	

AE   WORK SPACE: ISOLATION

	Classification	Detailed Description	Description	Planning Unit	Area (m2)
	AE	WORK SPACE: ISOLATION	ISOLATION	work space: isolation	
	AEA	WORK SPACE: ISOLATION: Baby	Isolation (Baby)	work space: isolation	
	AEB	WORK SPACE: ISOLATION: P4	Isolation (P4)	work space: isolation	

AF   WORK SPACE: CONSULTING

	Classification	Detailed Description	Description	Planning Unit	Area (m2)
	AF	WORK SPACE: CONSULTING	CONSULTING	work space: consulting	
	AFA	WORK SPACE: CONSULTING: Consulting Room	Consulting Room	work space: consulting	10.28
	AFAA	WORK SPACE: CONSULTING: Consulting Room: Consulting Room Adult	Consulting Room Adult	work space: consulting	10.28
	AFAB	WORK SPACE: CONSULTING: Consulting Room: Consulting Room Paediatric	Consulting Room Paediatric	work space: consulting	10.28
	AFB	WORK SPACE: CONSULTING: Interview Room	Interview Room	work space: consulting	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

42

AG WORK SPACE: COUNSELLING

Classification	Detailed Description	Description	Planning Unit	Area (m2)
AG	WORK SPACE: COUNSELLING	Counselling	work space: counselling	
AGA	WORK SPACE: COUNSELLING: Counselling Room	Counselling Room	work space: counselling	14.85
AGB	WORK SPACE: COUNSELLING: TB Dots Room	TB Dots Room	work space: counselling	14.85

AH WORK SPACE: EXAMINATION

Classification	Detailed Description	Description	Planning Unit	Area (m2)
AH	WORK SPACE: EXAMINATION	EXAMINATION	work space: examination	
AHA	WORK SPACE: EXAMINATION: Examination Room	Examination Room	work space: examination	13.5

AI WORK SPACE: ASSESSMENT

Classification	Detailed Description	Description	Planning Unit	Area (m2)
AI	WORK SPACE: ASSESSMENT	Assessment	work space: assessment	
AIA	WORK SPACE: ASSESSMENT: Adult Assessment Room	Adult Assessment Room	work space: assessment	
AIAA	WORK SPACE: ASSESSMENT: ASSESSMENT ROOM: Paediatric Assessment Room	Paediatric Assessment Room	work space: assessment	
AIB	WORK SPACE: ASSESSMENT: Vitals Room Mothers and Babies	Vitals Room Mothers and Babie	work space: assessment	
AIC	WORK SPACE: ASSESSMENT: Vitals Room Paediatrics	Vitals Room Paediatrics	work space: assessment	
AID	WORK SPACE: ASSESSMENT: Vitals Room Adults	Vitals Room Adults	work space: assessment	
AIDA	WORK SPACE: ASSESSMENT: VITALS ROOM ADULTS: PHC - Adult Vitals Area and Universal Toilet	PHC - Adult Vitals Area and Univ	work space: assessment	
AIE	WORK SPACE: ASSESSMENT: Sputum Collection Cubicle - External	Sputum Collection Cubicle - Exte	work space: assessment	
AIF	WORK SPACE: ASSESSMENT: Triage	Triage	work space: assessment	

AJ WORK SPACE: TREATMENT

Classification	Detailed Description	Description	Planning Unit	Area (m2)
AJ	WORK SPACE: TREATMENT	TREATMENT	work space: treatment	
AJA	WORK SPACE: TREATMENT: Treatment Room	Treatment Room	work space: treatment	15.2
AJAA	WORK SPACE: TREATMENT: TREATMENT ROOM: Treatment Bay Acute Adult	Treatment Bay Acute Adult	work space: treatment	15.2
AJAB	WORK SPACE: TREATMENT: TREATMENT ROOM: Treatment Bay Non-Acute Adult	Treatment Bay Non-Acute Adult	work space: treatment	15.2
AJAC	WORK SPACE: TREATMENT: TREATMENT ROOM: Treatment Bay Acute Paediatric	Treatment Bay Acute Paediatric	work space: treatment	15.2
AJAD	WORK SPACE: TREATMENT: TREATMENT ROOM: Treatment Bay Non-Acute Paediatric	Treatment Bay Non-Acute Paedi	work space: treatment	15.2
AJAE	WORK SPACE: TREATMENT: TREATMENT ROOM: Treatment Room/ Wound Care	Treatment Room/ Wound Care	work space: treatment	15.2
AJB	WORK SPACE: TREATMENT: Activity Room	Activity Room	work space: treatment	
AJC	WORK SPACE: TREATMENT: Wound Care Room	Wound Care Room	work space: treatment	
AJD	WORK SPACE: TREATMENT: Fracture Room	Fracture Room	work space: treatment	
AJE	WORK SPACE: TREATMENT: Suture Room	Suture Room	work space: treatment	
AJF	WORK SPACE: TREATMENT: (OT and Physio) Treatment Room	(OT and Physio) Treatment Roo	work space: treatment	
AJG	WORK SPACE: TREATMENT: Rehydration Cubicle	Rehydration Cubicle	work space: treatment	
AJH	WORK SPACE: TREATMENT: Resus	Resus	work space: treatment	
AJHA	WORK SPACE: TREATMENT: RESUS: Resus Bay Adult	Resus Bay Adult	work space: treatment	
AJHB	WORK SPACE: TREATMENT: RESUS: Resus Bay Paediatric	Resus Bay Paediatric	work space: treatment	
AJHC	WORK SPACE: TREATMENT: RESUS: Resus Bay Baby	Resus Bay Baby	work space: treatment	

43

AK   WORK SPACE: PROCEDURE

Classification	Detailed Description	Description	Planning Unit	Area (m2)
AK	WORK SPACE: PROCEDURE	PROCEDURE	work space: procedure	
AKA	WORK SPACE: PROCEDURE: Dental Surgery	Dental Surgery	work space: dental	
AKAA	WORK SPACE: PROCEDURE: DENTAL SURGERY: Dental Surgery - Small	Dental Surgery Small	work space: dental	
AKAB	WORK SPACE: PROCEDURE: DENTAL SURGERY: Dental Surgery - Large	Dental Surgery Large	work space: dental	
AKB	WORK SPACE: PROCEDURE: ECG Room	ECG Room	work space: procedure	
AKC	WORK SPACE: PROCEDURE: Endoscopy	Endoscopy	work space: procedure	
AKD	WORK SPACE: PROCEDURE: Exercise Room - Cardiology	Exercise Room - Cardiology	work space: procedure	
AKE	WORK SPACE: PROCEDURE: Lungfunction	Lungfunction	work space: procedure	
AKF	WORK SPACE: PROCEDURE: Neurology	Neurology	work space: procedure	
AKG	WORK SPACE: PROCEDURE: Nuclear Medicine	Nuclear Medicine	work space: procedure	
AKH	WORK SPACE: PROCEDURE: Opthalmology	Opthalmology	work space: procedure	
AKI	WORK SPACE: PROCEDURE: Optometry	Optometry	work space: procedure	
AKJ	WORK SPACE: PROCEDURE: Procedure Room	Procedure Room	work space: procedure	
AKK	WORK SPACE: PROCEDURE: Pulmonology Room	Pulmonology Room	work space: procedure	
AKL	WORK SPACE: PROCEDURE: Renal Unit	Renal Unit	work space: procedure	
AKM	WORK SPACE: PROCEDURE: Stomatherapy	Stomatherapy	work space: procedure	
AKN	WORK SPACE: PROCEDURE: Ultrasound Room	Ultrasound Room	work space: procedure	
AKO	WORK SPACE: PROCEDURE: Urology	Urology	work space: procedure	
AKP	WORK SPACE: PROCEDURE: Plaster of Paris Room (POP)	Plaster of Paris Room (POP)	work space: procedure	
AKQ	WORK SPACE: PROCEDURE: Patient Preparation Room	Patient Preparation Room	work space: procedure	
AKQA	WORK SPACE: PROCEDURE: PATIENT PREPARATION ROOM: PHC - Preparation Room	PHC - Preparation Room	work space: procedure	
AKR	WORK SPACE: PROCEDURE: Telemedicine Room	Telemedicine Room	work space: procedure	
AKS	WORK SPACE: PROCEDURE: Hazard Shower	Hazard Shower	work space: procedure	
AKT	WORK SPACE: PROCEDURE: Induction Room	Induction Room	work space: procedure	
AKU	WORK SPACE: PROCEDURE: ECT Procedure Room	ECT Procedure Room	work space: procedure	

AL   WORK SPACE: REHABILITATION

Classification	Detailed Description	Description	Planning Unit	Area (m2)
AL	WORK SPACE: REHABILITATION	REHABILITATION	work space: rehabilitation	
ALA	WORK SPACE: REHABILITATION: Audiology Booth	Audiology Booth	work space: rehabilitation	
ALB	WORK SPACE: REHABILITATION: Gymnasium	Gymnasium	work space: rehabilitation	
ALBA	WORK SPACE: REHABILITATION: GYMNASIUM: (OT + Physio) Gymnasium - Small	(OT + Physio) Gymnasium - Sma	work space: rehabilitation	
ALBB	WORK SPACE: REHABILITATION: GYMNASIUM: (OT + Physio) Gymnasium - Large	(OT + Physio) Gymnasium - Larg	work space: rehabilitation	
ALC	WORK SPACE: REHABILITATION: Nebulisation Area	Nebulisation Area	work space: rehabilitation	
ALD	WORK SPACE: REHABILITATION: Occupational Therapy	Occupational Therapy	work space: rehabilitation	
ALE	WORK SPACE: REHABILITATION: Orthotics & Prosthetics	Orthotics & Prosthetics	work space: rehabilitation	
ALF	WORK SPACE: REHABILITATION: Patient Support	Patient Support	work space: rehabilitation	
ALG	WORK SPACE: REHABILITATION: Play Area (Child)	Play Area (Child)	work space: rehabilitation	
ALH	WORK SPACE: REHABILITATION: Podiatry	Podiatry	work space: rehabilitation	
ALI	WORK SPACE: REHABILITATION: Speech Therapy	Speech Therapy	work space: rehabilitation	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

44

IUSS

ALJ	WORK SPACE: REHABILITATION: Evaluation Area (Orthotics & Prosthetics)	Evaluation Area (Orthotics & Pr	work space: rehabilitation	
ALK	WORK SPACE: REHABILITATION: Work Room	Work Room	work space: rehabilitation	
ALL	WORK SPACE: REHABILITATION: Physiotherapy	Physiotherapy	work space: rehabilitation	
ALM	WORK SPACE: REHABILITATION: Wheelchair Training Area	Wheelchair Training Area	work space: rehabilitation	
ALN	WORK SPACE: REHABILITATION: Psychotherapy	Psychotherapy	work space: rehabilitation	
ALO	WORK SPACE: REHABILITATION: Hydrotherapy	Hydrotherapy	work space: rehabilitation	
ALP	WORK SPACE: REHABILITATION: ADL	ADL	work space: rehabilitation	
ALPA	WORK SPACE: REHABILITATION: ADL: ADL Bathroom	ADL Bathroom	work space: rehabilitation	
ALPB	WORK SPACE: REHABILITATION: ADL: ADL Bedroom	ADL Bedroom	work space: rehabilitation	
ALPC	WORK SPACE: REHABILITATION: ADL: ADL Dining Room	ADL Dining Room	work space: rehabilitation	
ALPD	WORK SPACE: REHABILITATION: ADL: ADL Kitchen	ADL Kitchen	work space: rehabilitation	
ALQ	WORK SPACE: REHABILITATION: Psychiatric Group Therapy Room	Psychiatric Group Therapy Roo	work space: rehabilitation	
ALQA	WORK SPACE: REHABILITATION: PSYCHIATRIC GROUP THERAPY ROOM: Ensuite	Ensuite	work space: rehabilitation	

AM   WORK SPACE: RADIOLOGY

Classification	Detailed Description	Description	Planning Unit	Area (m2)
AM	WORK SPACE: RADIOLOGY	RADIOLOGY	work space:	
AMA	WORK SPACE: RADIOLOGY: Bone Densitometry	Bone Densitometry	work space:	
AMB	WORK SPACE: RADIOLOGY: Bunker Brachytherapy Unit	Bunker Brachytherapy Unit	work space:	
AMC	WORK SPACE: RADIOLOGY: Bunker Linear Accelerator	Bunker Linear Accelerator	work space:	
AMD	WORK SPACE: RADIOLOGY: Chest Unit	Chest Unit	work space:	
AME	WORK SPACE: RADIOLOGY: CT Scanner Room	CT Scanner	work space:	
AMEA	WORK SPACE: RADIOLOGY: CT SCANNER ROOM: CT Control Room	CT Control Room	work space:	
AMEB	WORK SPACE: RADIOLOGY: CT SCANNER ROOM: CT Technical Room	CT Technical Room	work space:	
AMF	WORK SPACE: RADIOLOGY: Fluoroscopy Screening Room	Fluoroscopy Screening Room	work space:	
AMFA	WORK SPACE: RADIOLOGY: FLUOROSCOPY SCREENING ROOM: Fluoroscopy Control Room	Fluoroscopy Control Room	work space:	
AMG	WORK SPACE: RADIOLOGY: Full Body Scanner	Full Body Scanner	work space:	
AMH	WORK SPACE: RADIOLOGY: X-Ray Room - Bucky	X-Ray Room - Bucky	work space:	
AMI	WORK SPACE: RADIOLOGY: Heart Cathetisation	Heart Cathetisation	work space:	
AMJ	WORK SPACE: RADIOLOGY: Mamography	Mamography	work space:	
AMK	WORK SPACE: RADIOLOGY: MRI Unit	MRI Unit	work space:	
AML	WORK SPACE: RADIOLOGY: Panoramic Unit	Panoramic Unit	work space:	
AMM	WORK SPACE: RADIOLOGY: PET CT	PET CT	work space:	
AMN	WORK SPACE: RADIOLOGY: Daylight Area	Daylight Area	work space:	
AMO	WORK SPACE: RADIOLOGY: Xray View And Report Room	XRay View And Report Room	work space:	
AMP	WORK SPACE: RADIOLOGY: XRay Room - Chest	XRay Room - Chest	work space:	
AMQ	WORK SPACE: RADIOLOGY: XRay Room - Intra-oral	XRay Room - Intra-oral	work space:	
AMR	WORK SPACE: RADIOLOGY: XRay Room - MRI	XRay Room - MRI	work space:	
AMRA	WORK SPACE: RADIOLOGY: XRAY ROOM - MRI: XRay MRI Control Room	XRay MRI Control Room	work space:	
AMRB	WORK SPACE: RADIOLOGY: XRAY ROOM - MRI: XRay MRI Technical Room	XRay MRI Technical Room	work space:	
AMS	WORK SPACE: RADIOLOGY: Chemotherapy Treatment Room	Chemotherapy Treatment Roo	work space:	
AMSA	WORK SPACE: RADIOLOGY: CHEMOTHERAPY TREATMENT ROOM: Chemotherapy Planning Room	Chemotherapy Planning Room	work space:	
AMT	WORK SPACE: RADIOLOGY: XRAY Brachy Therapy Room	XRay Brachy Therapy Room	work space:	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

45

	Classification	Detailed Description	Description	Planning Unit	Area (m2)
	AMTA	WORK SPACE: RADIOLOGY: XRAY BRACHY THERAPY ROOM: XRAY Linear Accelorator Room	Xray Linear Accelorator Room	work space:	
	AMU	WORK SPACE: RADIOLOGY: PAX/ RIS Room	PAX/ RIS Room	work space:	
	AMV	WORK SPACE: RADIOLOGY: Panthogram	Panthogram	work space:	
	AMW	WORK SPACE: RADIOLOGY: Ultrasound Room	Ultrasound Room	work space:	
	AMX	WORK SPACE: RADIOLOGY: LODOX	LODOX	work space:	
	AMY	WORK SPACE: RADIOLOGY: Phlebotomy Room	Phlebotomy Room	work space:	
	AMZ	WORK SPACE: RADIOLOGY: Induction Room	Induction Room	work space:	

AN   WORK SPACE: PROCEDURE: ECT Procedure Room: ECT Procedure Recovery Room

	Classification	Detailed Description	Description	Planning Unit	Area (m2)
	AKUA	WORK SPACE: PROCEDURE: ECT Procedure Room: ECT Procedure Recovery Room	ECT Procedure Recovery Room	work space:	
	AN	WORK SPACE: THEATRE	Theatre	work space: theatre	
	ANA	WORK SPACE: THEATRE: Pre-op Waiting	Pre-op Waiting	work space:	
	ANB	WORK SPACE: THEATRE: Patient Recovery Bay	Patient Recovery Area	work space:	
	ANC	WORK SPACE: THEATRE: Ante/ Setting Area	Ante/ Setting Area	work space:	
	AND	WORK SPACE: THEATRE: Scrub Area Single	Scrub Area Single	work space:	
	ANDE	WORK SPACE: THEATRE: SCRUB AREA: Scrub Shared	Scrub Shared	work space:	
	ANE	WORK SPACE: THEATRE: Robing Area	Robing Area	work space:	
	ANF	WORK SPACE: THEATRE: Pre Op Patient Holding Bay	Pre Op Patient Holding Bay	work space:	
	ANG	WORK SPACE: THEATRE: Blood Gas Analyzer	Blood Gas Analyzer	work space:	
	ANH	WORK SPACE: THEATRE: Operating Theatre - Standard	Operating Theatre - Standard	work space:	
	ANI	WORK SPACE: THEATRE: Operating Theatre - Large	Operating Theatre - Large	work space:	
	ANJ	WORK SPACE: THEATRE: Operating Theatre - Minor	Operating Theatre - Minor	work space:	
	ANK	WORK SPACE: THEATRE: Operating Theatre - Specialist Cardiac	Operating Theatre - Specialist C	work space:	
	ANL	WORK SPACE: THEATRE: Operating Theatre - Specialist Cath Lab	Operating Theatre - Specialist C	work space:	
	ANM	WORK SPACE: THEATRE: Operating Theatre - Specialist Orthopaedic	Operating Theatre - Specialist O	work space:	
	ANN	WORK SPACE: THEATRE: Operating Theatre - Specialist Burns	Operating Theatre - Specialist B	work space:	
	ANO	WORK SPACE: THEATRE: Operating Theatre - Specialist Paediatric	Operating Theatre - Specialist P	work space:	
	ANP	WORK SPACE: THEATRE: Operating Theatre - Specialist Laparoscopic	Operating Theatre - Specialist La	work space:	
	ANQ	WORK SPACE: THEATRE: Angio Procedure Room	Angio Procedure Room	work space:	
	ANQA	WORK SPACE: THEATRE: ANGIO PROCEDURE ROOM: Angio Report Room	Angio Report Room	work space:	
	ANQB	WORK SPACE: THEATRE: ANGIO PROCEDURE ROOM: Angio Sterile Setup Room	Angio Sterile Setup Room	work space:	
	ANR	WORK SPACE: THEATRE: Operating Theatre - Obstetrics	Operating Theatre - Obstetrics	work space:	
	ANS	WORK SPACE: THEATRE: Operating Theatre - Medium	Operating Theatre - Medium	work space:	
	ANT	WORK SPACE: THEATRE: Setup Room	Setup Room	work space:	

AO   WORK SPACE: CSSD

	Classification	Detailed Description	Description	Planning Unit	Area (m2)
	AO	WORK SPACE: CSSD	CSSD	work space:	
	AOA	WORK SPACE: CSSD: Medical Equipment Processing	Medical Equipment Processing	work space:	
	AOB	WORK SPACE: CSSD: Instrument Hand Wash	Instrument Hand Wash	work space:	
	AOC	WORK SPACE: CSSD: Instrument Bulk Washers	Instrument Bulk Washers	work space:	
	AOD	WORK SPACE: CSSD: Microsurgical Instruments	Microsurgical Instruments	work space:	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

46

AOE	WORK SPACE: CSSD: Decontamination Area		Decontamination Area	work space:	
AOF	WORK SPACE: CSSD: Stripping		Stripping	work space:	
AOG	WORK SPACE: CSSD: Sorting		Sorting	work space:	
AOH	WORK SPACE: CSSD: Autoclaves Area		Autoclaves Area	work space:	
AOI	WORK SPACE: CSSD: Loading		Loading	work space:	
AOJ	WORK SPACE: CSSD: Cooling		Cooling	work space:	
AOK	WORK SPACE: CSSD: Packing Area - Sterile		Packing Area - Sterile	work space:	
AOL	WORK SPACE: CSSD: Trolley Wash		Trolley Wash	work space:	
AOM	WORK SPACE: CSSD: Receiving/ Cleaning Room		Receiving/ Cleaning Room	work space:	
AON	WORK SPACE: CSSD: Dispatch		Dispatch	work space:	
AOO	WORK SPACE: CSSD: Wet Linen Trolleys		Wet Linen Trolleys	work space:	
AP	WORK SPACE: PHC - CSSD		PHC - CSSD	work space:	

B   WORK SPACE SUPPORT

B   WORK SPACE SUPPORT

Classification	Detailed Description	Description	Planning Unit	Area (m2)
B	WORK SPACE SUPPORT	WORK SPACE SUPPORT	work space support:	

BA   WORK SPACE SUPPORT: NURSE STATION

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BA	WORK SPACE SUPPORT: NURSE STATION	NURSE STATION	work space support:	
BAA	WORK SPACE SUPPORT: NURSE STATION: Nurse Station	Nurse Station	work space support:	14.72
BAAA	WORK SPACE SUPPORT: NURSE STATION: NURSE STATION: PHC Nurse Station	PHC Nurse Station	work space support:	14.72
BAB	WORK SPACE SUPPORT: NURSE STATION: Duty Room	Duty Room	work space support:	
BAC	WORK SPACE SUPPORT: NURSE STATION: Sisters Office	Sisters Office	work space support:	

BB   WORK SPACE SUPPORT: RECEPTION/ CONTROL

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BB	WORK SPACE SUPPORT: RECEPTION/ CONTROL	RECEPTION/ CONTROL	work space support:	
BBA	WORK SPACE SUPPORT: RECEPTION/ CONTROL: Reception	Reception	work space support:	10.35
BBB	WORK SPACE SUPPORT: RECEPTION/ CONTROL: Admission Point/ Counter	Admission Point/ Counter	work space support:	
BBC	WORK SPACE SUPPORT: RECEPTION/ CONTROL: Help Desk	Help Desk	work space support:	
BBCA	WORK SPACE SUPPORT: RECEPTION/ CONTROL: HELP DESK: PHC Help Desk	PHC Help Desk	work space support:	
BBD	WORK SPACE SUPPORT: RECEPTION/ CONTROL: Info/ Security Desk	Info/ Security Desk	work space support:	
BBE	WORK SPACE SUPPORT: RECEPTION/ CONTROL: Client Service Point	Client Service Point	work space support:	
BBF	WORK SPACE SUPPORT: RECEPTION/ CONTROL: Control Room	Control Room	work space support:	
BBG	WORK SPACE SUPPORT: RECEPTION/ CONTROL: Call Centre Management	Call Centre Management	work space support:	

BC   WORK SPACE SUPPORT: OFFICE

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BC	WORK SPACE SUPPORT: OFFICE	OFFICE	work space support:	
BCA	WORK SPACE SUPPORT: OFFICE: Cellular	Cellular Office	work space support:	12

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

47

BCAA	WORK SPACE SUPPORT: OFFICE: CELLULAR: Ward Office	Ward Office	work space support:	12
BCB	WORK SPACE SUPPORT: OFFICE: Group Office	Group Office	work space support:	
BCC	WORK SPACE SUPPORT: OFFICE: Open Plan	Open Plan Office	work space support:	
BCD	WORK SPACE SUPPORT: OFFICE: Combi Office	Combi Office	work space support:	
BCE	WORK SPACE SUPPORT: OFFICE: Mail Room	Mail Room	work space support:	
BCF	WORK SPACE SUPPORT: OFFICE: Reprographics Room	Reprographics	work space support:	
BCG	WORK SPACE SUPPORT: OFFICE: Porter Station/ Area	Porter Area	work space support:	
BCH	WORK SPACE SUPPORT: OFFICE: Police Station	Police Station	work space support:	
BCI	WORK SPACE SUPPORT: OFFICE: Clinical Workstation	Clinical Workstation	work space support:	5.4

BD WORK SPACE SUPPORT: TRAINING/ MEETING

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BD	WORK SPACE SUPPORT: TRAINING/ MEETING	TRAINING/ MEETING	work space support:	
BDA	WORK SPACE SUPPORT: TRAINING/ MEETING: Classroom	Classroom	work space support:	
BDAA	WORK SPACE SUPPORT: TRAINING/ MEETING: CLASSROOM: Oncology Class Room	Oncology Class Room	work space support:	
BDB	WORK SPACE SUPPORT: TRAINING/ MEETING: Lecture Room	Lecture Room	work space support:	
BDC	WORK SPACE SUPPORT: TRAINING/ MEETING: Meeting Room	Meeting Room	work space support:	15.54
BDCA	WORK SPACE SUPPORT: TRAINING/ MEETING: MEETING ROOM: Meeting Room - Small	Meeting Room - Small	work space support:	15.54
BDCB	WORK SPACE SUPPORT: TRAINING/ MEETING: MEETING ROOM: Meeting Room - Medium	Meeting Room - Medium	work space support:	15.54
BDCC	WORK SPACE SUPPORT: TRAINING/ MEETING: MEETING ROOM: Meeting Room - Large	Meeting Room - Large	work space support:	15.54
BDD	WORK SPACE SUPPORT: TRAINING/ MEETING: Training Room - Education	Training Room - Education	work space support:	
BDE	WORK SPACE SUPPORT: TRAINING/ MEETING: Student Area/ Study Room	Student Area/ Study Room	work space support:	
BDF	WORK SPACE SUPPORT: TRAINING/ MEETING: Board/ Conference Room	Board/ Conference Room	work space support:	
BDG	WORK SPACE SUPPORT: TRAINING/ MEETING: Auditorium	Auditorium	work space support:	
BDH	WORK SPACE SUPPORT: TRAINING/ MEETING: Multi-purpose Room	Multi-purpose Room	work space support:	20.65

BE WORK SPACE SUPPORT: ABLUTION

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BE	WORK SPACE SUPPORT: ABLUTION	ABLUTION	work space support:	16.71
BEA	WORK SPACE SUPPORT: ABLUTION: Public/ Visitor	Public/ Visitor Ablution	work space support:	
BEAA	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: Male	PUBLIC/ VISITOR: Male	work space support:	
BEAAA	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: MALE: WC	Public Male WC	work space support:	
BEAAB	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: MALE: Shower	Public Male Shower	work space support:	
BEAAC	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: MALE: Shower (Assisted)	Public Male Shower (Assisted)	work space support:	
BEAAD	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: MALE: Bath	Public Male Bath	work space support:	
BEAAE	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: MALE: Bath (Assisted)	Public Male Bath (Assisted)	work space support:	
BEAAF	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: MALE: WHB	Public Male Bath WHB	work space support:	
BEAAG	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: MALE: WC (Disabled)	Public Male WC (Disabled)	work space support:	
BEAB	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: Female	PUBLIC/ VISITOR: Female	work space support:	
BEABA	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: FEMALE: WC	Public Female WC	work space support:	
BEABB	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: FEMALE: Shower	Public Female Shower	work space support:	
BEABC	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: FEMALE: Shower (Assisted)	Public Female Shower (Assisted)	work space support:	
BEABD	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: FEMALE: Bath	Public Female Bath	work space support:	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

48

BEABE	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: FEMALE: Bath (Assisted)	Public Female Bath (Assisted)	work space support:	
BEABF	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: FEMALE: WHB	Public Female Bath WHB	work space support:	
BEABG	WORK SPACE SUPPORT: ABLUTION: PUBLIC/ VISITOR: FEMALE: WC (Disabled)	Public Female WC (Disabled)	work space support:	
BEB	WORK SPACE SUPPORT: ABLUTION: Patient	Patient Ablution	work space support:	
BEBA	WORK SPACE SUPPORT: ABLUTION: PATIENT: Male	PATIENT: Male	work space support:	
BEBAA	WORK SPACE SUPPORT: ABLUTION: PATIENT: MALE: WC	Patient Male WC	work space support:	
BEBAB	WORK SPACE SUPPORT: ABLUTION: PATIENT: MALE: Shower	Patient Male Shower	work space support:	
BEBAC	WORK SPACE SUPPORT: ABLUTION: PATIENT: MALE: Shower (Assisted)	Patient Male Shower (Assisted)	work space support:	
BEBAD	WORK SPACE SUPPORT: ABLUTION: PATIENT: MALE: Bath	Patient Male Bath	work space support:	
BEBAE	WORK SPACE SUPPORT: ABLUTION: PATIENT: MALE: Bath (Assisted)	Patient Male Bath (Assisted)	work space support:	
BEBAF	WORK SPACE SUPPORT: ABLUTION: PATIENT: MALE: WHB	Patient Male WHB	work space support:	
BEBAG	WORK SPACE SUPPORT: ABLUTION: PATIENT: MALE: WC (Assisted)	Patient Male WC (Assisted)	work space support:	
BEBB	WORK SPACE SUPPORT: ABLUTION: PATIENT: Female	PATIENT: Female	work space support:	
BEBBA	WORK SPACE SUPPORT: ABLUTION: PATIENT: FEMALE: WC	Patient Female WC	work space support:	
BEBBB	WORK SPACE SUPPORT: ABLUTION: PATIENT: FEMALE: Shower	Patient Female Shower	work space support:	
BEBBC	WORK SPACE SUPPORT: ABLUTION: PATIENT: FEMALE: Shower (Assisted)	Patient Female Shower (Assiste	work space support:	
BEBBD	WORK SPACE SUPPORT: ABLUTION: PATIENT: FEMALE: Bath	Patient Female Bath	work space support:	
BEBBE	WORK SPACE SUPPORT: ABLUTION: PATIENT: FEMALE: Bath (Assisted)	Patient Female Bath (Assisted)	work space support:	
BEBBF	WORK SPACE SUPPORT: ABLUTION: PATIENT: FEMALE: WHB	Patient Female Bath WHB	work space support:	
BEBBG	WORK SPACE SUPPORT: ABLUTION: PATIENT: FEMALE: WC (Assisted)	Patient Female Bath WHB	work space support:	
BEC	WORK SPACE SUPPORT: ABLUTION: Staff	Staff Ablution	work space support:	
BECA	WORK SPACE SUPPORT: ABLUTION: STAFF: Male	STAFF: Male	work space support:	
BECAA	WORK SPACE SUPPORT: ABLUTION: STAFF: MALE: WC	Staff Male WC	work space support:	
BECAB	WORK SPACE SUPPORT: ABLUTION: STAFF: MALE: Shower	Staff Male Shower	work space support:	
BECAC	WORK SPACE SUPPORT: ABLUTION: STAFF: MALE: Shower (Assisted)	Staff Male Shower (Assisted)	work space support:	
BECAD	WORK SPACE SUPPORT: ABLUTION: STAFF: MALE: Bath	Staff Male Bath	work space support:	
BECAE	WORK SPACE SUPPORT: ABLUTION: STAFF: MALE: Bath (Assisted)	Staff Male Bath (Assisted)	work space support:	
BECAF	WORK SPACE SUPPORT: ABLUTION: STAFF: MALE: WHB	Staff Male Bath WHB	work space support:	
BECB	WORK SPACE SUPPORT: ABLUTION: STAFF: Female	STAFF: Female	work space support:	
BECBA	WORK SPACE SUPPORT: ABLUTION: STAFF: FEMALE: WC	Staff Female WC	work space support:	
BECBB	WORK SPACE SUPPORT: ABLUTION: STAFF: FEMALE: Shower	Staff Female Shower	work space support:	
BECBC	WORK SPACE SUPPORT: ABLUTION: STAFF: FEMALE: Shower (Assisted)	Staff Female Shower (Assisted)	work space support:	
BECBD	WORK SPACE SUPPORT: ABLUTION: STAFF: FEMALE: Bath	Staff Female Bath	work space support:	
BECBE	WORK SPACE SUPPORT: ABLUTION: STAFF: FEMALE: Bath (Assisted)	Staff Female Bath (Assisted)	work space support:	
BECBF	WORK SPACE SUPPORT: ABLUTION: STAFF: FEMALE: WHB	Staff Female Bath WHB	work space support:	
BED	WORK SPACE SUPPORT: ABLUTION: Breast Feeding Mothers Room	Breast Feeding Mothers	work space support:	
BEE	WORK SPACE SUPPORT: ABLUTION: Bed Unit Ensuite Standard	Bed Unit Ensuite Standard	work space support:	
BEF	WORK SPACE SUPPORT: ABLUTION: Decontamination Shower	Decontamination Shower	work space support:	
BEG	WORK SPACE SUPPORT: ABLUTION: Bariatric Toilet	Bariatric Toilet	work space support:	
BEH	WORK SPACE SUPPORT: ABLUTION: Bariatric Shower	Bariatric Shower	work space support:	
BEI	WORK SPACE SUPPORT: ABLUTION: Clinical Wash Hand Basin	Clinical Wash Hand Basin	work space support:	
BEJ	WORK SPACE SUPPORT: ABLUTION: Bed Unit Ensuite Paraplegic	Bed Unit Ensuite Paraplegic	work space support:	

49

BF WORK SPACE SUPPORT: CONTROL

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BF	WORK SPACE SUPPORT: CONTROL	CONTROL	work space support:	
BFA	WORK SPACE SUPPORT: CONTROL: Control Room	Control Room	work space support:	
BFB	WORK SPACE SUPPORT: CONTROL: Switchboard	Switchboard	work space support:	
BFC	WORK SPACE SUPPORT: CONTROL: Security	Security	work space support:	
BFD	WORK SPACE SUPPORT: CONTROL: Security Point	Security Point	work space support:	
BFE	WORK SPACE SUPPORT: CONTROL: Security Search Room	Security Search Room	work space support:	

BG WORK SPACE SUPPORT: STORAGE

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BG	WORK SPACE SUPPORT: STORAGE	STORAGE	work space support:	
BGA	WORK SPACE SUPPORT: STORAGE: Lockers	Lockers	work space support:	21.01
BGB	WORK SPACE SUPPORT: STORAGE: Store Room	Store Room	work space support:	20.78
BGC	WORK SPACE SUPPORT: STORAGE: Stock Room	Stock Room	work space support:	12
BGD	WORK SPACE SUPPORT: STORAGE: Records Room	Records Room	work space support:	10.35
BGE	WORK SPACE SUPPORT: STORAGE: Mobile Trolley/ Wheelchair Bay	Mobile Trolley/ Wheelchair Bay	work space support:	
BGF	WORK SPACE SUPPORT: STORAGE: Bulk Store	Bulk Store	work space support:	
BGG	WORK SPACE SUPPORT: STORAGE: Condemned Equipment	Condemned Equipment	work space support:	
BGH	WORK SPACE SUPPORT: STORAGE: Equipment Store	Equipment Store	work space support:	20
BGI	WORK SPACE SUPPORT: STORAGE: Kit Store	Kit Room	work space support:	6
BGIA	WORK SPACE SUPPORT: STORAGE: KIT STORE: Kit on Ward	Kit on Ward	work space support:	6
BGIB	WORK SPACE SUPPORT: STORAGE: KIT STORE: Kit Central	Kit Central	work space support:	6
BGJ	WORK SPACE SUPPORT: STORAGE: Medical Records	Medical Records	work space support:	
BGK	WORK SPACE SUPPORT: STORAGE: Garden Store	Garden Store	work space support:	
BGL	WORK SPACE SUPPORT: STORAGE: Medicine Store	Medicine Store	work space support:	4
BGLA	WORK SPACE SUPPORT: STORAGE: MEDICINE STORE: Store - Medicine - Small	Store - Medicine - Small	work space support:	4
BGLB	WORK SPACE SUPPORT: STORAGE: MEDICINE STORE: Store - Medicine - Medium	Store - Medicine - Medium	work space support:	4
BGLC	WORK SPACE SUPPORT: STORAGE: MEDICINE STORE: Store - Medicine - Large	Store - Medicine - Large	work space support:	4
BGM	WORK SPACE SUPPORT: STORAGE: Safe	Safe	work space support:	
BGN	WORK SPACE SUPPORT: STORAGE: Equipment Bays	Equipment Bays	work space support:	
BGO	WORK SPACE SUPPORT: STORAGE: Stationary Store	Stationary Store	work space support:	
BGP	WORK SPACE SUPPORT: STORAGE: Consumables	Consumables	work space support:	
BGQ	WORK SPACE SUPPORT: STORAGE: Sterile	Sterile	work space support:	
BGQA	WORK SPACE SUPPORT: STORAGE: STERILE: Store - Sterile Small	Store - Sterile Small	work space support:	
BGQB	WORK SPACE SUPPORT: STORAGE: STERILE: Store - Sterile Large	Store - Sterile Large	work space support:	
BGR	WORK SPACE SUPPORT: STORAGE: Disaster Store	Disaster Store	work space support:	
BGS	WORK SPACE SUPPORT: STORAGE: Store Surgical	Store Surgical	work space support:	
BGT	WORK SPACE SUPPORT: STORAGE: Bay - Wheelchair	Bay -Wheelchair	work space support:	
BGU	WORK SPACE SUPPORT: STORAGE: Bay - Portable X-Ray Machine	Bay - Portable X-Ray Machine	work space support:	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

50

BH WORK SPACE SUPPORT: CHANGE

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BH	WORK SPACE SUPPORT: CHANGE	CHANGE	work space support:	
BHA	WORK SPACE SUPPORT: CHANGE: Public/ Visitor	Public/ Visitor	work space support:	
BHB	WORK SPACE SUPPORT: CHANGE: Patient Cubicle	Patient Cubicle	work space support:	
BHBA	WORK SPACE SUPPORT: CHANGE: Patient Cubicle Disabled	Patient Cubicle Disabled	work space support:	
BHC	WORK SPACE SUPPORT: CHANGE: Staff	Staff	work space support:	
BHCA	WORK SPACE SUPPORT: CHANGE: STAFF: PHC Staff Change	PHC Staff Change	work space support:	
BHD	WORK SPACE SUPPORT: CHANGE: Gowning Area - Visitors	Gowning Area - Visitors	work space support:	
BHE	WORK SPACE SUPPORT: CHANGE: Baby Change Room	Baby Change Room	work space support:	

BI WORK SPACE SUPPORT: CLEAN UTILITY

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BI	WORK SPACE SUPPORT: CLEAN UTILITY	CLEAN UTILITY	work space support:	
BIA	WORK SPACE SUPPORT: CLEAN UTILITY: Clean Utility (Setting Out Room)	Clean Utility (Setting Out Room)	work space support:	8.5

BJ WORK SPACE SUPPORT: CLEAN ROOM

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BJ	WORK SPACE SUPPORT: CLEAN ROOM	CLEAN ROOM	work space support:	
BJA	WORK SPACE SUPPORT: CLEAN ROOM: Clean Room	Clean Room	work space support:	

BK WORK SPACE SUPPORT: AMENITIES

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BK	WORK SPACE SUPPORT: AMENITIES	AMENITIES	work space support:	
BKA	WORK SPACE SUPPORT: AMENITIES: Gymnasium	Gymnasium	work space support:	
BKB	WORK SPACE SUPPORT: AMENITIES: Creche	Creche	work space support:	
BKC	WORK SPACE SUPPORT: AMENITIES: First Aid and Medical Station	First Aid and Medical Station	work space support:	
BKD	WORK SPACE SUPPORT: AMENITIES: Hairdresser	Hairdresser	work space support:	
BKE	WORK SPACE SUPPORT: AMENITIES: Child Play Room/ Area	Child Play Room/ Area	work space support:	
BKG	WORK SPACE SUPPORT: AMENITIES: Recreational Facilities	Recreational Facilities	work space support:	
BKH	WORK SPACE SUPPORT: AMENITIES: Shops	Shops	work space support:	
BKI	WORK SPACE SUPPORT: AMENITIES: Library	Library	work space support:	
BKJ	WORK SPACE SUPPORT: AMENITIES: Wash Bay	Wash Bay	work space support:	
BKK	WORK SPACE SUPPORT: AMENITIES: Lounge	Lounge	work space support:	
BKKA	WORK SPACE SUPPORT: AMENITIES: LOUNGE: Psychiatric Patient Lounge	Psychiatric Patient Lounge	work space support:	
BKL	WORK SPACE SUPPORT: AMENITIES: Dining Room	Dining Room	work space support:	
BKLA	WORK SPACE SUPPORT: AMENITIES: DINING ROOM: Psychiatric Patient Dining Room	Psychiatric Patient Dining Room	work space support:	
BKM	WORK SPACE SUPPORT: AMENITIES: Bedroom	Bedroom	work space support:	
BKN	WORK SPACE SUPPORT: AMENITIES: Restroom/ Tea Room/ Pause Area	Restroom/ Tea Room/ Pause Ar	work space support:	15.54
BKNA	WORK SPACE SUPPORT: AMENITIES: RESTROOM/ TEA ROOM/ PAUSE AREA: Staff Room and Lockers	Staff Room and Lockers	work space support:	15.54
BKO	WORK SPACE SUPPORT: AMENITIES: Staff Accommodation	Staff Accommodation	work space support:	
BKP	WORK SPACE SUPPORT: AMENITIES: Sleep Over Facility - Staff/ Dr Overnight Stay	Sleep Over Facility - Staff/ Dr Ov	work space support:	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

51

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BKPA	WORK SPACE SUPPORT: AMENITIES: SLEEP OVER FACILITY - STAFF/ DR OVERNIGHT STAY: Ensuite	Sleep Over Facility - Ensuite	work space support:	
BKQ	WORK SPACE SUPPORT: AMENITIES: Wash Bay/ Area	Wash Bay/ Area	work space support:	
BKR	WORK SPACE SUPPORT: AMENITIES: Chapel	Chapel	work space support:	
BKS	WORK SPACE SUPPORT: AMENITIES: Day Room	Day Room	work space support:	12
BKSA	WORK SPACE SUPPORT: AMENITIES: DAY ROOM: Oncology Day Room	Oncology Day Room	work space support:	12
BKT	WORK SPACE SUPPORT: AMENITIES: Cafeteria	Cafeteria	work space support:	
BKU	WORK SPACE SUPPORT: AMENITIES: Visitor Room	Visitor Room	work space support:	31.25
BKV	WORK SPACE SUPPORT: AMENITIES: Transit Lounge	Transit Lounge	work space support:	31.25
BKW	WORK SPACE SUPPORT: AMENITIES: Quite Room	Quite Room	work space support:	31.25
BKX	WORK SPACE SUPPORT: AMENITIES: Bariatric Seating	Bariatric Seating	work space support:	31.25

BL   WORK SPACE SUPPORT: CLEANERS ROOM

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BL	WORK SPACE SUPPORT: CLEANERS ROOM	CLEANERS ROOM	work space support:	
BLA	WORK SPACE SUPPORT: CLEANERS ROOM: Cleaners Room (Cleaners Closet)	Cleaners Room Option 1	work space support:	7.8
BLB	WORK SPACE SUPPORT: CLEANERS ROOM: Cleaners Room (Cleaners Closet)	Cleaners Room Option 2	work space support:	4.84
BLC	WORK SPACE SUPPORT: CLEANERS ROOM: Cleaners Station	Cleaners Station	work space support:	4.84

BM   WORK SPACE SUPPORT: DIRTY

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BM	WORK SPACE SUPPORT: DIRTY	DIRTY	work space support:	
BMA	WORK SPACE SUPPORT: DIRTY: Dirty Foyer	Dirty Foyer	work space support:	
BMB	WORK SPACE SUPPORT: DIRTY: Dirty Receiving	Dirty Receiving	work space support:	
BMC	WORK SPACE SUPPORT: DIRTY: Dirty Utility (Refuse)	Dirty Utility (Refuse)	work space support:	7.2
BMD	WORK SPACE SUPPORT: DIRTY: Dirty Utility (Refuse & Dirty Linen)	Dirty Utility (Refuse & Dirty Line	work space support:	
BME	WORK SPACE SUPPORT: DIRTY: Refuse Room	Refuse Room	work space support:	
BMF	WORK SPACE SUPPORT: DIRTY: Sluice Room	Sluice Room	work space support:	11.76
BMG	WORK SPACE SUPPORT: DIRTY: Rinse/ Sluice Area	Rinse/ Sluice Area	work space support:	
BMH	WORK SPACE SUPPORT: DIRTY: Scrub Room	Scrub Room	work space support:	

BN   WORK SPACE SUPPORT: MORTUARY

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BN	WORK SPACE SUPPORT: MORTUARY	MORTUARY	work space support:	
BNA	WORK SPACE SUPPORT: MORTUARY: Autopsy Room	Autopsy Room	work space support:	
BNB	WORK SPACE SUPPORT: MORTUARY: Corpse Area	Corpse Area	work space support:	
BNC	WORK SPACE SUPPORT: MORTUARY: Corpse Preparation Area	Corpse Preparation Area	work space support:	
BND	WORK SPACE SUPPORT: MORTUARY: Corpse Receiving Area	Corpse Receiving Area	work space support:	
BNE	WORK SPACE SUPPORT: MORTUARY: Freezer Room	Freezer Area	work space support:	
BNF	WORK SPACE SUPPORT: MORTUARY: Grieving Room	Grieving Room	work space support:	
BNG	WORK SPACE SUPPORT: MORTUARY: Trolley Wash	Trolley Wash	work space support:	
BNH	WORK SPACE SUPPORT: MORTUARY: Vehicle Access	Vehicle Access	work space support:	
BNI	WORK SPACE SUPPORT: MORTUARY: Viewing Room	Viewing Room	work space support:	
BNJ	WORK SPACE SUPPORT: MORTUARY: Body Cold Room	Body Cold Room	work space support:	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

52

BO   WORK SPACE SUPPORT: INFORMATION TECHNOLOGY

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BO	WORK SPACE SUPPORT: INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY	work space support:	
BOA	WORK SPACE SUPPORT: INFORMATION TECHNOLOGY: IT Server Room	IT Server Room	work space support:	6
BOB	WORK SPACE SUPPORT: INFORMATION TECHNOLOGY: IT Switch Room	IT Switch Room	work space support:	6

BP   WORK SPACE SUPPORT: PHARMACY

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BP	WORK SPACE SUPPORT: PHARMACY	PHARMACY	work space support:	
BPA	WORK SPACE SUPPORT: PHARMACY: Break-up Workspace	Break-up Workspace	work space support:	
BPB	WORK SPACE SUPPORT: PHARMACY: Cold Room	Cold Room	work space support:	
BPC	WORK SPACE SUPPORT: PHARMACY: Delivery Area - Enclosed	Delivery Area - Enclosed	work space support:	
BPD	WORK SPACE SUPPORT: PHARMACY: Dispatch Area - Enclosed	Dispatch Area - Enclosed	work space support:	
BPE	WORK SPACE SUPPORT: PHARMACY: Dispensing - Day	Dispensing - Day	work space support:	
BPEA	WORK SPACE SUPPORT: PHARMACY: DISPENSING: PHC - Pharmacy Dispensary, Bulkstore and Transito	PHC - Pharmacy Dispensary, Bul	work space support:	
BPF	WORK SPACE SUPPORT: PHARMACY: Dispensing - Ward	Dispensing - Ward	work space support:	
BPG	WORK SPACE SUPPORT: PHARMACY: Holding Area	Holding Area	work space support:	
BPH	WORK SPACE SUPPORT: PHARMACY: Manufacturing - Dry	Manufacturing - Dry	work space support:	
BPI	WORK SPACE SUPPORT: PHARMACY: Manufacturing - Wet	Manufacturing - Wet	work space support:	
BPJ	WORK SPACE SUPPORT: PHARMACY: Re-packing Area	Re-packing Area	work space support:	
BPK	WORK SPACE SUPPORT: PHARMACY: Transito In	Transito In	work space support:	
BPL	WORK SPACE SUPPORT: PHARMACY: Free Standing Fridges	Free Standing Fridges	work space support:	
BPM	WORK SPACE SUPPORT: PHARMACY: Store Pharmacy	Store Pharmacy	work space support:	
BPN	WORK SPACE SUPPORT: PHARMACY: IV Fluid Store	IV Fluid Store	work space support:	

BQ   WORK SPACE SUPPORT: KITCHEN

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BQ	WORK SPACE SUPPORT: KITCHEN	KITCHEN	work space support:	
BQA	WORK SPACE SUPPORT: KITCHEN: Ward Kitchen	Ward Kitchen	work space support:	9.5
BQB	WORK SPACE SUPPORT: KITCHEN: Kitchenette/ Small Kitchen	Kitchenette/ Small Kitchen	work space support:	
BQC	WORK SPACE SUPPORT: KITCHEN: Milk kitchen	Milk kitchen	work space support:	
BQCA	WORK SPACE SUPPORT: KITCHEN: MILK KITCHEN: Dispatch Counter	MILK KITCHEN: Dispatch Counte	work space support:	
BQD	WORK SPACE SUPPORT: KITCHEN: Cooking/ Cooking Island	Cooking/ Cooking Island	work space support:	
BQE	WORK SPACE SUPPORT: KITCHEN: Preparation Area	Preparation Area	work space support:	
BQF	WORK SPACE SUPPORT: KITCHEN: Wash Area	Wash Area	work space support:	
BQG	WORK SPACE SUPPORT: KITCHEN: Vegetable Pre-prep	Vegetable Pre-prep	work space support:	
BQH	WORK SPACE SUPPORT: KITCHEN: Pot Wash	Pot Wash	work space support:	
BQI	WORK SPACE SUPPORT: KITCHEN: Wash-up	Wash-up	work space support:	
BQJ	WORK SPACE SUPPORT: KITCHEN: Trolley Wash	Trolley Wash	work space support:	
BQK	WORK SPACE SUPPORT: KITCHEN: Food Trolley Park/ Bay	Food Trolley Park/ Bay	work space support:	
BQL	WORK SPACE SUPPORT: KITCHEN: Food Preparation	Food Preparation	work space support:	
BQM	WORK SPACE SUPPORT: KITCHEN: Sandwich Preparation	Sandwich Preparation	work space support:	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

	BQN	WORK SPACE SUPPORT: KITCHEN: General Preparation	General Preparation	work space support:	
	BQO	WORK SPACE SUPPORT: KITCHEN: Meat/ Fish Preparation	Meat/ Fish Preparation	work space support:	
	BQP	WORK SPACE SUPPORT: KITCHEN: Vegetable Preparation	Vegetable Preparation	work space support:	
	BQQ	WORK SPACE SUPPORT: KITCHEN: Finishing/ Plating	Finishing/ Plating	work space support:	
	BQR	WORK SPACE SUPPORT: KITCHEN: Food Store	Food Store	work space support:	
	BQS	WORK SPACE SUPPORT: KITCHEN: Groceries Store	Groceries Store	work space support:	
	BQT	WORK SPACE SUPPORT: KITCHEN: Dry Store	Dry Store	work space support:	
	BQU	WORK SPACE SUPPORT: KITCHEN: Cold Room	Cold Room	work space support:	
	BQV	WORK SPACE SUPPORT: KITCHEN: Freezer Room	Freezer Room	work space support:	
	BQW	WORK SPACE SUPPORT: KITCHEN: Goods Receiving	Goods Receiving	work space support:	
	BQX	WORK SPACE SUPPORT: KITCHEN: Holding Area	Holding Area	work space support:	
	BQY	WORK SPACE SUPPORT: KITCHEN: Day Store Room	Day Store Room	work space support:	

BR **WORK SPACE SUPPORT: LABORATORY**

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BR	WORK SPACE SUPPORT: LABORATORY	LABORATORY	work space support:	
BRA	WORK SPACE SUPPORT: LABORATORY: Analysis Area	Analysis Area	work space support:	
BRB	WORK SPACE SUPPORT: LABORATORY: Blood Bank	Blood Bank	work space support:	
BRC	WORK SPACE SUPPORT: LABORATORY: Blood Donating Area	Blood Donating Area	work space support:	
BRD	WORK SPACE SUPPORT: LABORATORY: Blood Drawing Area	Blood Drawing Area	work space support:	
BRE	WORK SPACE SUPPORT: LABORATORY: Blood Products	Blood Products	work space support:	
BRF	WORK SPACE SUPPORT: LABORATORY: Cool Room	Cool Room	work space support:	
BRG	WORK SPACE SUPPORT: LABORATORY: Gas Bank	Gas Bank	work space support:	
BRH	WORK SPACE SUPPORT: LABORATORY: In-vitro Area	In-vitro Area	work space support:	
BRI	WORK SPACE SUPPORT: LABORATORY: Laminar Flow Room	Laminar Flow Room	work space support:	
BRJ	WORK SPACE SUPPORT: LABORATORY: Sample Desk	Sample Desk	work space support:	
BRK	WORK SPACE SUPPORT: LABORATORY: Washing-up Area	Washing-up Area	work space support:	
BRL	WORK SPACE SUPPORT: LABORATORY: Fluorescence Room	Fluorescence Room	work space support:	
BRM	WORK SPACE SUPPORT: LABORATORY: Microscope	Microscope	work space support:	
BRN	WORK SPACE SUPPORT: LABORATORY: Dental Laboratory	Dental Laboratory	work space support:	

BS **WORK SPACE SUPPORT: LAUNDRY**

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BS	WORK SPACE SUPPORT: LAUNDRY	LAUNDRY	work space support:	
BSA	WORK SPACE SUPPORT: LAUNDRY: Dispatch Area	Dispatch Area	work space support:	
BSB	WORK SPACE SUPPORT: LAUNDRY: Folding Tables	Folding Tables	work space support:	
BSC	WORK SPACE SUPPORT: LAUNDRY: Ironing Area	Ironing Area	work space support:	
BSD	WORK SPACE SUPPORT: LAUNDRY: Needlework Room	Needlework Room	work space support:	
BSE	WORK SPACE SUPPORT: LAUNDRY: Receiving Area	Receiving Area	work space support:	
BSF	WORK SPACE SUPPORT: LAUNDRY: Sorting Area	Sorting Area	work space support:	
BSG	WORK SPACE SUPPORT: LAUNDRY: Washing	Washing	work space support:	
BSH	WORK SPACE SUPPORT: LAUNDRY: Clean Linen	Clean Linen	work space support:	9
BSHA	WORK SPACE SUPPORT: LAUNDRY: CLEAN LINEN: Clean Linen Room - Small	Clean Linen Room - Small	work space support:	9

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

54

	BSHB	WORK SPACE SUPPORT: LAUNDRY: CLEAN LINEN: Clean Linen Room - Large	Clean Linen Room - Large	work space support:	9
	BSI	WORK SPACE SUPPORT: LAUNDRY: Dirty Linen/ Laundry	Dirty Linen/ Laundry	work space support:	
	BSJ	WORK SPACE SUPPORT: LAUNDRY: Trolley Wash	Trolley Wash	work space support:	
	BSK	WORK SPACE SUPPORT: LAUNDRY: Sewing Area	Sewing Area	work space support:	
	BSL	WORK SPACE SUPPORT: LAUNDRY: Patient Laundry/ Laundry Room	Patient Laundry/ Laundry Room	work space support:	
	BSM	WORK SPACE SUPPORT: LAUNDRY: Tumble Dryers	Tumble Dryers	work space support:	

BT WORK SPACE SUPPORT: CENTRAL STORES

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BT	WORK SPACE SUPPORT: CENTRAL STORES	CENTRAL STORES	work space support:	
BTA	WORK SPACE SUPPORT: CENTRAL STORES: Break-up/ Packing Area	Break-up/ Packing Area	work space support:	
BTB	WORK SPACE SUPPORT: CENTRAL STORES: Dispatch	Dispatch	work space support:	
BTC	WORK SPACE SUPPORT: CENTRAL STORES: Receiving Area	Receiving Area	work space support:	
BTD	WORK SPACE SUPPORT: CENTRAL STORES: Transit In	Transit In	work space support:	
BTE	WORK SPACE SUPPORT: CENTRAL STORES: Transit Out	Transit Out	work space support:	
BTF	WORK SPACE SUPPORT: CENTRAL STORES: Trolley Holding	Trolley Holding	work space support:	
BTG	WORK SPACE SUPPORT: CENTRAL STORES: LINEN BANK/ (BULK LINEN STORE)	LINEN BANK	work space support:	
BTGA	WORK SPACE SUPPORT: CENTRAL STORES: LINEN BANK/ (BULK LINEN STORE): Receiving Area	Receiving Area	work space support:	
BTGB	WORK SPACE SUPPORT: CENTRAL STORES: LINEN BANK/ (BULK LINEN STORE): Needlework Room	Needlework Room	work space support:	
BTGC	WORK SPACE SUPPORT: CENTRAL STORES: LINEN BANK/ (BULK LINEN STORE): Sorting Area	Sorting Area	work space support:	
BTGD	WORK SPACE SUPPORT: CENTRAL STORES: LINEN BANK/ (BULK LINEN STORE): Trolley Wash Bay	Trolley Wash Bay	work space support:	
BTGE	WORK SPACE SUPPORT: CENTRAL STORES: LINEN BANK/ (BULK LINEN STORE): Dispatch	Dispatch	work space support:	

BU WORK SPACE SUPPORT: WORKSHOPS

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BU	WORK SPACE SUPPORT: WORKSHOPS	WORKSHOPS	work space support:	
BUA	WORK SPACE SUPPORT: WORKSHOPS: Electrical Workshop	Electrical Workshop	work space support:	
BUB	WORK SPACE SUPPORT: WORKSHOPS: Mechanical Workshop	Mechanical Workshop	work space support:	
BUC	WORK SPACE SUPPORT: WORKSHOPS: Casting Room	Casting Room	work space support:	
BUD	WORK SPACE SUPPORT: WORKSHOPS: Equipment Pool Unit	Equipment Pool Unit	work space support:	
BUE	WORK SPACE SUPPORT: WORKSHOPS: Decontamination Area	Decontamination Area	work space support:	
BUF	WORK SPACE SUPPORT: WORKSHOPS: Key Manufacturing	Key Manufacturing	work space support:	
BUG	WORK SPACE SUPPORT: WORKSHOPS: Machine Area	Machine Area	work space support:	
BUH	WORK SPACE SUPPORT: WORKSHOPS: Maintenance Area	Maintenance Area	work space support:	
BUI	WORK SPACE SUPPORT: WORKSHOPS: Workbench Area	Workbench Area	work space support:	
BUJ	WORK SPACE SUPPORT: WORKSHOPS: Othotics & Prosthetics	Othotics & Prosthetics	work space support:	
BUK	WORK SPACE SUPPORT: WORKSHOPS: Electronic	Electronic	work space support:	
BUL	WORK SPACE SUPPORT: WORKSHOPS: Wet Area (Infusion Pump Testing)	Wet Area (Infusion Pump Testin	work space support:	
BUM	WORK SPACE SUPPORT: WORKSHOPS: Anaesthesia & Ventilation	Anaesthesia & Ventilation	work space support:	

BV WORK SPACE SUPPORT: PARKING

Classification	Detailed Description	Description	Planning Unit	Area (m2)
BV	WORK SPACE SUPPORT: PARKING	PARKING	work space support:	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

55

	BVA	WORK SPACE SUPPORT: PARKING: Parking Area	Parking Area	work space support:	
	BVB	WORK SPACE SUPPORT: PARKING: Drivers Facilities	Drivers Facilities	work space support:	
	BVC	WORK SPACE SUPPORT: PARKING: Car Wash	Car Wash	work space support:	
	BVD	WORK SPACE SUPPORT: PARKING: Outside Parking Area	Outside Parking Area	work space support:	
	BVE	WORK SPACE SUPPORT: PARKING: Garage	Garage	work space support:	

C   CORE

C   CORE

Classification	Detailed Description	Description	Planning Unit	Area (m2)
C	CORE	CORE	core:	

CA   CORE: CIRCULATION

Classification	Detailed Description	Description	Planning Unit	Area (m2)
CA	CORE: CIRCULATION	CIRCULATION	core:	
CAA	CORE: CIRCULATION: HORIZONTAL	HORIZONTAL	core:	
CAAA	CORE: CIRCULATION: HORIZONTAL: ENTRANCE	ENTRANCE	core:	
CAAAA	CORE: CIRCULATION: HORIZONTAL: ENTRANCE: Foyer	Foyer	core:	
CAAAB	CORE: CIRCULATION: HORIZONTAL: ENTRANCE: Pedestrian Entrances and Circulation	Pedestrian Entrances and Circul	core:	
CAAAC	CORE: CIRCULATION: HORIZONTAL: ENTRANCE: Car parking Entrances	Car parking Entrances	core:	
CAAAD	CORE: CIRCULATION: HORIZONTAL: ENTRANCE: Goods and Service Entrances	Goods and Service Entrances	core:	
CAAAE	CORE: CIRCULATION: HORIZONTAL: ENTRANCE: Goods Distribution	Goods Distribution	core:	
CAAAF	CORE: CIRCULATION: HORIZONTAL: ENTRANCE: Municipal Service Points	Municipal Service Points	core:	
CAAAG	CORE: CIRCULATION: HORIZONTAL: ENTRANCE: Public Interface	Public Interface	core:	
CAAAH	CORE: CIRCULATION: HORIZONTAL: ENTRANCE: Off Load Area - Patient - P4	Off Load Area - Patient - P4	core:	
CAAAI	CORE: CIRCULATION: HORIZONTAL: ENTRANCE: Drop-off Area	Drop-off Area	core:	
CAAAJ	CORE: CIRCULATION: HORIZONTAL: ENTRANCE: Ward Entrance	Ward Entrance	core:	4
CAAB	CORE: CIRCULATION: HORIZONTAL: Passage or Corridor	Passage or Corridor	core:	
CAAC	CORE: CIRCULATION: HORIZONTAL: Covered Walkway	Covered Walkway	core:	
CAAD	CORE: CIRCULATION: HORIZONTAL: Bridge	Bridge	core:	
CAAE	CORE: CIRCULATION: HORIZONTAL: Parking	Parking	core:	
CAAF	CORE: CIRCULATION: HORIZONTAL: Primary	Primary Circulation	core: primary circulation	
CAAG	CORE: CIRCULATION: HORIZONTAL: Secondary	Secondary Circulation	core: secondary circulation	
CAAH	CORE: CIRCULATION: HORIZONTAL: Stoep	Stoep	core:	
CAAI	CORE: CIRCULATION: HORIZONTAL: Lift lobby	Lift lobby	core:	
CAAJ	CORE: CIRCULATION: HORIZONTAL: WALKWAY	WALKWAY	core:	
CAAJA	CORE: CIRCULATION: HORIZONTAL: WALKWAY: Covered	Covered	core:	
CAAJB	CORE: CIRCULATION: HORIZONTAL: WALKWAY: Uncovered	Uncovered	core:	
CAAK	CORE: CIRCULATION: HORIZONTAL: Waiting/ Visiting Area	Waiting/ Visiting Area	core: waiting	9
CAAKA	CORE: CIRCULATION: HORIZONTAL: WAITING/ VISITING AREA: Sub-waiting Area	Sub-waiting Area	core: waiting	9
CAAL	CORE: CIRCULATION: HORIZONTAL: Loading Area/ Delivery Yard	Loading Area/ Delivery Yard	core:	
CAAM	CORE: CIRCULATION: HORIZONTAL: Entrance Lobby/ Lobby	Entrance Lobby/ Lobby	core:	
CAAN	CORE: CIRCULATION: HORIZONTAL: Fire Lobby	Fire Lobby	core:	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

56

Classification	Detailed Description	Description	Planning Unit	Area (m2)
CAAO	CORE: CIRCULATION: HORIZONTAL: Isolation Lobby	Isolation Lobby	core:	
CAAP	CORE: CIRCULATION: HORIZONTAL: Air Lock	Air Lock	core:	
CAAQ	CORE: CIRCULATION: HORIZONTAL: Open Area	Open Area	core:	
CAAR	CORE: CIRCULATION: HORIZONTAL: Outside Area	Outside Area	core:	
CAB	CORE: CIRCULATION: VERTICAL	VERTICAL	core:	
CABA	CORE: CIRCULATION: VERTICAL: Staircase	Staircase	core:	
CABB	CORE: CIRCULATION: VERTICAL: Escalator	Escalator	core:	
CABC	CORE: CIRCULATION: VERTICAL: Lift well	Lift well	core:	
CABD	CORE: CIRCULATION: VERTICAL: Atrium	Atrium	core:	
CABE	CORE: CIRCULATION: VERTICAL: Ramp	Ramp	core:	
CABF	CORE: CIRCULATION: VERTICAL: Shaft/ Light Well	Shaft/ Light Well	core:	
CABG	CORE: CIRCULATION: VERTICAL: Courtyard	Courtyard	core:	
CABH	CORE: CIRCULATION: VERTICAL: Dumb Waiter	Dumb Waiter	core:	
CABI	CORE: CIRCULATION: VERTICAL: Tube Station	Tube Station	core:	

CB   CORE: TECHNICAL SUPPORT

Classification	Detailed Description	Description	Planning Unit	Area (m2)
CB	CORE: TECHNICAL SUPPORT	TECHNICAL SUPPORT	core:	
CBA	CORE: TECHNICAL SUPPORT: PLANT ROOM	PLANT ROOM	core: plant	
CBAA	CORE: TECHNICAL SUPPORT: PLANT ROOM: TELECOMMUNICATIONS	TELECOMMUNICATIONS	core: plant	
CBAAA	CORE: TECHNICAL SUPPORT: PLANT ROOM: TELECOMMUNICATIONS: PABX Room	PABX Room	core: plant	
CBAB	CORE: TECHNICAL SUPPORT: PLANT ROOM: ELECTRICAL	ELECTRICAL	core: plant	
CBABA	CORE: TECHNICAL SUPPORT: PLANT ROOM: ELECTRICAL: Sub-station	Sub-station	core: plant	
CBABB	CORE: TECHNICAL SUPPORT: PLANT ROOM: ELECTRICAL: Transformer room	Transformer room	core: plant	
CBABC	CORE: TECHNICAL SUPPORT: PLANT ROOM: ELECTRICAL: Lift motor room	Lift motor room	core: plant	
CBABD	CORE: TECHNICAL SUPPORT: PLANT ROOM: ELECTRICAL: UPS/ Standbye Room	UPS/ Standbye Room	core: plant	
CBABE	CORE: TECHNICAL SUPPORT: PLANT ROOM: ELECTRICAL: High Voltage (HV) Room	High Voltage (HV) Room	core: plant	
CBABF	CORE: TECHNICAL SUPPORT: PLANT ROOM: ELECTRICAL: Transformer/ Switchgear (TX) Room	Transformer/ Switchgear (TX) R	core: plant	
CBABG	CORE: TECHNICAL SUPPORT: PLANT ROOM: ELECTRICAL: Medium Low Voltage (MLV) Room	Medium Low Voltage (MLV) Roo	core: plant	
CBABH	CORE: TECHNICAL SUPPORT: PLANT ROOM: ELECTRICAL: Generator Room	Generator Room	core: plant	
CBAC	CORE: TECHNICAL SUPPORT: PLANT ROOM: MECHANICAL	MECHANICAL	core: plant	
CBACA	CORE: TECHNICAL SUPPORT: PLANT ROOM: MECHANICAL: Central air-conditioning plant room	Central air-conditioning plant ro	core: plant	
CBAD	CORE: TECHNICAL SUPPORT: PLANT ROOM: DUCTS	DUCTS	core: plant	
CBADA	CORE: TECHNICAL SUPPORT: PLANT ROOM: DUCTS Vertical duct	Vertical Duct	core: plant	
CBAE	CORE: TECHNICAL SUPPORT: PLANT ROOM: Cold Water Storage	Cold Water Storafe	core: plant	
CBAF	CORE: TECHNICAL SUPPORT: PLANT ROOM: Gas Storage/ Medical Gas	Gas Storage/ Medical Gas	core: plant	
CBAG	CORE: TECHNICAL SUPPORT: PLANT ROOM: Fire Hose Reel	Fire Hose Reel	core: plant	
CBAH	CORE: TECHNICAL SUPPORT: PLANT ROOM: Vacuum	Vacuum	core: plant	
CBAI	CORE: TECHNICAL SUPPORT: PLANT ROOM: Heating	Heating	core: plant	
CBAJ	CORE: TECHNICAL SUPPORT: PLANT ROOM: Hot Water Room	Hot Water Room	core: plant	
CBAK	CORE: TECHNICAL SUPPORT: PLANT ROOM: Fuel Storage	Fuel Storage	core: plant	
CBAL	CORE: TECHNICAL SUPPORT: PLANT ROOM: Sterile Water Plant	Sterile Water Plant	core: plant	
CBB	CORE: TECHNICAL SUPPORT: Filling Station	Filling Station	core:	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

57

	CBC	CORE: TECHNICAL SUPPORT: Interstitial Space	Interstitial Space	core:	

CC   CORE: FACILITIES MANAGEMENT

Classification	Detailed Description	Description	Planning Unit	Area (m2)
CC	CORE: FACILITIES MANAGEMENT	FACILITIES MANAGEMENT	core:	
CCA	CORE: FACILITIES MANAGEMENT: Physical Security	Physical Security	core:	
CCC	CORE: FACILITIES MANAGEMENT: Building Maintenance	Building Maintenance	core:	
CCD	CORE: FACILITIES MANAGEMENT: Non Clerical Staff Facilities	Non Clerical Staff Facilities	core:	
CCE	CORE: FACILITIES MANAGEMENT: Facilities Stores	Facilities Stores	core:	
CCF	CORE: FACILITIES MANAGEMENT: Rest Rooms	Rest Rooms	core:	
CCI	CORE: FACILITIES MANAGEMENT: Building Management System	Building Management Systems	core:	
CCJ	CORE: FACILITIES MANAGEMENT: Engineering & Maintenance Services	Engineering & Maintenance Ser	core:	

CD   CORE: VOID AREA

Classification	Detailed Description	Description	Planning Unit	Area (m2)
CD	CORE: VOID AREA	VOID AREA	core:	
CDA	CORE: VOID AREA: Void Area	Void Area	core:	

CE   CORE: WASTE MANAGEMENT

Classification	Detailed Description	Description	Planning Unit	Area (m2)
CE	CORE: WASTE MANAGEMENT	WASTE MANAGEMENT	core:	
CEA	CORE: WASTE MANAGEMENT: Recycable Waste	Recycable Waste	core:	
CEB	CORE: WASTE MANAGEMENT: General Waste	General Waste	core:	
CEC	CORE: WASTE MANAGEMENT: Medical Waste	Medical Waste	core:	
CED	CORE: WASTE MANAGEMENT: Dispatch Dirty	Dispatch Dirty	core:	
CEE	CORE: WASTE MANAGEMENT: Nuclear Waste	Nuclear Waste	core:	
CEF	CORE: WASTE MANAGEMENT: Biomedical Waste	Biomedical Waste	core:	
CEG	CORE: WASTE MANAGEMENT: Kitchen Waste	Kitchen Waste	core:	
CEH	CORE: WASTE MANAGEMENT: Waste Disposal Room	Waste Disposal System - P4	core:	
CEI	CORE: WASTE MANAGEMENT: Hazardous Waste	Hazardous Waste	core:	

D   STRUCTURE

D   STRUCTURE

Classification	Detailed Description	Description	Planning Unit	Area (m2)
D	STRUCTURE	STRUCTURE	structure:	

DA   STRUCTURE: WALL

Classification	Detailed Description	Description	Planning Unit	Area (m2)
DA	STRUCTURE: WALL	WALL	structure:	

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

58

DC   **STRUCTURE: COLUMNS**

Classification	Detailed Description	Description	Planning Unit	Area (m2)
DB	STRUCTURE: COLUMNS	COLUMNS	structure:	

59

APPENDIX D – DEPARTMENT CLASSIFICATION

Department Classification

-   **TEMPORARY PLACE MARKER**

    -   **TEMPORARY PLACE MARKER**

       -   TEMPORARY PLACE MARKER

A   **OUTPATIENT SERVICES**

    A   **OUTPATIENT SERVICES**

       A   OUTPATIENT SERVICES

    AA   **Outpatient Unit**

AA	Outpatient Unit
AAA	Outpatient Unit: OPD
AAB	Outpatient Unit: Gynaecology/ Obstetrics
AAC	Family Medicine

    AB   **Accident and Emergency Unit**

AB	Accident and Emergency Unit
ABA	Accident and Emergency Unit: Emergency Unit
ABB	Accident and Emergency Unit: Observation
ABC	Accident and Emergency Unit: Crisis

B   **INPATIENT SERVICES**

    B   **INPATIENT SERVICES**

       B   INPATIENT SERVICES

    BA   **Inpatient Accommodation**

BA	Inpatient Accommodation
BAA	Inpatient Accommodation: Day/ Overnight
BAB	Inpatient Accommodation: Geriatrics
BAC	Inpatient Accommodation: Gynaecology
BAD	Inpatient Accommodation: Medical Ward
BAE	Inpatient Accommodation: Observation Ward
BAF	Inpatient Accommodation: Orthopaedic Ward

INFRASTRUCTUREUNITSUPPORTSYSTEMS(IUSS)PROJECT
Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

60

BAG	Inpatient Accommodation: Paediatrics Ward	
BAH	Inpatient Accommodation: Mental Health Ward	
BAI	Inpatient Accommodation: Rehabilitation Ward	
BAJ	Inpatient Accommodation: Renal	
BAK	Inpatient Accommodation: Short Stay	
BAL	Inpatient Accommodation: Spinal	
BAM	Inpatient Accommodation: Stepdown	
BAN	Inpatient Accommodation: Surgical	
BAO	Inpatient Accommodation: TB	

BB   Maternity

BB	Maternity
BBA	Maternity: Ante-natal Ward
BBB	Maternity: Post-natal Ward
BBC	Maternity: Delivery
BBD	Maternity: Neonatal
BBE	Maternity: Kangaroo

BC   Mental Health Unit

BC	Mental Health Unit

BD   High and Intensive care

BD	High and Intensive care
BDA	High and Intensive care: High Care
BDB	High and Intensive care: Intensive Care
BDC	High and Intensive care: Burns Unit
BDD	High and Intensive care: Neonatal ICU

C   CLINICAL SERVICES

C   CLINICAL SERVICES

C	CLINICAL SERVICES

CA   Radiology

CA	Radiology
CAA	Radiology: Diagnostic Radiology
CAB	Radiology: Radiation Oncology (Radio Therapy)
CAC	Radiology: Nuclear Medicine

CB   Operating Theatres

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Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

61

CB	Operating Theatres	

CC Rehabilitation/ Allied Health

CC	Rehabilitation/ Allied Health
CCA	Rehabilitation/ Allied Health: Physiotherapy
CCB	Rehabilitation/ Allied Health: Occupational Therapy
CCC	Rehabilitation/ Allied Health: Audiology
CCD	Rehabilitation/ Allied Health: Speech Therapy
CCE	Rehabilitation/ Allied Health: Dietetics
CCF	Rehabilitation/ Allied Health: Orthotics
CCG	Rehabilitation/ Allied Health: Podiatry
CCH	Rehabilitation/ Allied Health: Social Welfare
CCI	Rehabilitation/ Allied Health: Spinal Unit
CCJ	Rehabilitation/ Allied Health: Stroke Unit
CCK	Rehabilitation/ Allied Health: Victim Support Unit

CD Sterile Supply Unit

CD	Sterile Supply Unit

CE Outsourced Clinical Support Services

CE	Outsourced Clinical Support Services
CEA	Outsourced Clinical Support Services: Laboratory
CEB	Outsourced Clinical Support Services: Blood Bank

CF Pharmacy Unit

CF	Pharmacy Unit

CG Clinical Engineering

CG	Clinical Engineering
CGA	CLINICAL ENGINEERING: Clinical Workshops

CH Hospital Mortuary/ Autopsy Unit

CH	Hospital Mortuary/ Autopsy Unit
CHA	Hospital Mortuary/ Autopsy Unit: Mortuary
CHB	Hospital Mortuary/ Autopsy Unit: Forensic Mortuary

D ADMINISTRATIVE SERVICES

D	ADMINISTRATIVE SERVICES

D	ADMINISTRATIVE SERVICES

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Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

62

DA   Admission and Patient Support Unit

DA	Admission and Patient Support Unit
DAA	Admission and Patient Support Unit: Reception
DAB	Admission and Patient Support Unit: Admissions
DAC	Admission and Patient Support Unit: Waiting
DAD	Admission and Patient Support Unit: Records
DAE	Admission and Patient Support Unit: Records Archives
DAF	Admission and Patient Support Unit: Religious Support
DAG	Admission and Patient Support Unit: Commercial

DB   Administration Unit

DB	Administration Unit

DC   Staff Overnight Facilities

DC	Staff Overnight Facilities

DD   BULK STORES

DD	BULK STORES
DDA	Bulk Stores
DDB	Condemned Equipment

E   HOUSEKEEPING SERVICES

E   HOUSEKEEPING SERVICES

E	HOUSEKEEPING SERVICES

EA   Kitchen

EA	Kitchen
EB	Laundry
EC	Central Cleaning
ED	Waste

F   BUILDING AND ENGINEERING SERVICES

F   BUILDING AND ENGINEERING SERVICES

F	BUILDING AND ENGINEERING SERVICES

FA   Security

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Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

63

FA	Security
FB	Plant Rooms
FC	BUILDING MANAGEMENT AND SUPPORT
FCA	Maintenance Workshops
FCB	Building Workshops
FCC	Grounds
FD	Transport

G   PRIMARY CIRCULATION

G   PRIMARY CIRCULATION

G	PRIMARY CIRCULATION

GA   Circulation

GA	Circulation

H   ANCILLARY SERVICES

H   ANCILLARY SERVICES

H	ANCILLARY SERVICES

HA   SERVICE SUPPORT FACILITIES

HA	SERVICE SUPPORT FACILITIES
HAA	Transit Unit
HAB	Mother Lodgers Unit
HAC	Creche

HB   Residential Facilities

HB	Residential Facilities

HC   Educational Facilities

HC	Educational Facilities

I   STRUCTURE

I   STRUCTURE

I	STRUCTURE

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Health Facility Guides: 3 March 2014
Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

64

J   VOID

J   VOID

J   VOID

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Facility Assembly Schedule Toolkit briefing tool (FAST)
[DISCUSSION DRAFT 1.0]

65

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[DISCUSSION DRAFT 1.0]

66